EXHIBIT B

Copy of 38 Research Studies submitted by Applicant with prior Appeal Brief (4/25/2003) with Research Studies nos. 1-6, 10-19 being redacted.

Jennifer Skord

Citations from BIOLOGICAL ABSTRACTS: BIO

[redacted]

Citations from Biological Abstracts: BO1

[redacted]

7. NDN 199-0046-0153-4: **Improvement of immune functions in HIV infection by sulfur supplementation: Two randomized trials .**

8. NDN 199-0035-3930-4: **Neuropsychological performance in relationship to selenium status in the Miami HIV-1 infected drug abusers (MIDAS) study .**

9. NDN 199-0002-5178-4: **Effects of trace metal compounds on HIV-1 reverse transcriptase: An in vitro study .**

Citations from Federal Research in Progress (FRP): FRP

[redacted]

Citations from MEDLINE(R) DATABASE (2001 TO PRESENT): MED

[redacted]

Citations from MEDLINE(R) DATABASE (1997 TO 2000): ME1

[redacted]

20. NDN 194-0175-3123-5: **Improvement of immune functions in HIV infection by sulfur supplementation: two randomized trials Ýsee comments¨**

21. NDN 194-0173-8388-0: **A recent study shows selenium supplementation benefits HIV patients: Selenomax decreases risk of development of depressed-dejected mood state Ýnews¨**

22. NDN 194-0166-6594-3: **Development of an instrument to assess nutritional risk factors for children infected with human immunodeficiency virus.**

23. NDN 194-0140-9182-0: **Contribution of zinc to reduce CD4+ risk factor for 'severe' infection relapse in aging: parallelism with HIV .**

24. NDN 194-0123-8149-1: **Hypocalcaemia in HIV infection and AIDS.**

25. NDN 194-0099-6813-9: **Sodium selenite and N-acetylcysteine in antiretroviral-naive HIV-1-infected patients: a randomized, controlled pilot study .**

26. NDN 194-0073-7686-5: **Oxidative stress and plasma antioxidant micronutrients in humans with HIV infection Ýsee comments¨**

27. NDN 194-0069-3796-0: **Serum and plasma markers of nutritional status in children infected with the human immunodeficiency virus.**

28. NDN 194-0067-2701-0: **The impact of high-risk patients on the results of clinical trials .**

29. NDN 194-0047-1288-0: **Serum selenium versus lymphocyte subsets and markers of disease progression and inflammatory response in human immunodeficiency virus-1 infection.**

30. NDN 194-0035-2060-0: **Muscle involvement in human immunodeficiency virus-infected patients is associated with marked selenium deficiency.**

31. NDN 194-0023-2193-0: **One-year antioxidant supplementation with beta-carotene or selenium for patients infected with human immunodeficiency virus: a pilot study .**

32. NDN 194-0004-7177-7: **Effects of micronutrient intake on survival in human immunodeficiency virus type 1 infection.**

Citations from MEDLINE(R) DATABASE (1993 TO 1997): ME2

33. NDN 193-0040-4870-0: **Synoviorthesis with colloidal 32P chromic phosphate for the treatment of hemophilic arthropathy Ýsee comments¨**

34. NDN 193-0029-8213-2: **Dietary micronutrient intake and risk of progression to acquired immunodeficiency syndrome (AIDS) in human immunodeficiency virus type 1 (HIV-1)-infected homosexual men.**

35. NDN 193-0016-6822-3: **Molecular modeling studies suggest that zinc ions inhibit HIV-1 protease by binding at catalytic aspartates.**

36. NDN 193-0006-9908-0: **Role of nutritional status and weight loss in HIV seroconversion among Rwandan women.**

Citations from MEDLINE(R) DATABASE (1990 TO 1993): ME3

37. NDN 192-0099-0708-6: **Nutritional status of HIV-infected patients during the early disease stages.**

38. NDN 192-0042-7146-3: **Relationship of serum copper and zinc levels to HIV-1 seropositivity and progression to AIDS.**

Citations from BIOLOGICAL ABSTRACTS: BIO

1. Reference values of selenium in plasma of population from Barcelona: comparison with several pathologies.
BIO 06-17[illegible]06-138637 NDN- 244[illegible]969-0

get this item

Rubio, Roser; Garcia-Beltran, Lucia; Sabe, Rosa

JOURNAL NAME- Journal of Trace Elements in Medicine and Biology
VOL. 16
NO. 4
2002
PP. 231-237.
DOCUMENT TYPE- Article
ISSN- 0946-672X
ADDRESS- E-mail: roser.rubio@apolo.[illegible].ub.es, Departament de Química Analitica, Universitat de Barcelona, Marti i Franques 1-11, 0802[illegible]rcelona, Spain, Spain
LANGUAGE- ENGLISH

Plasma selenium reference values from healthy donors in the metropolitan area of Barcelona are determined. A random sample from 156 healthy adults (control group) is analyzed by using electrothermal atomic absorption spectrometry with Zeeman effect background correction. The relationship between several pathologies and Se content is also evaluated. Se content from 64 samples from subjects with chronic renal failure and 52 from subjects suffering from several malignancies are determined and the results are compared to the reference values. Moreover, Se concentrations are determined and compared in two groups of children, healthy (19 samples) and children of mothers infected with HIV (16 samples). In the control group, Se plasma concentration ranges between 50 and 145 ugcntdotL-1 (82.2+-17 ugcntdotL-1). Significantly Lower values are found in the two pathologies studied (malignancy and chronic renal failure) compared to the control group. However, no significant differences in Se content are found between the two groups studied regarding malignancy and chronic renal failure. In children of mothers infected with HIV, Se status is significantly lower than that of healthy children.

DESCRIPTOR(S)- *Clinical Chemistry (Applied Medical Sciences); *Epidemiology (Population Studies); *infection; *human (Hominidae) --adult; *human (Hominidae) Spain; *HIV-1 Human immunodeficiency virus 1 (Retroviridae) --pathogenicity; *animals; *Chordata; *DNA and RNA Reverse Transcribing Viruses; *Humans; *Mammals; *Microorganisms; *Primates; *Vertebrates; *Viruses; *cancer --neoplasm disease; *chronic renal failure --urological diseases; * selenium --plasma reference value; *Zeeman effect background correction; *mathematical and computer techniques; *Kidney Failure, Chronic (MeSH); *Neoplasms (MeSH)
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia; Hominidae --Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae -- DNA and RNA Reverse Transcribing Viruses; Retroviridae --Microorganisms; Retroviridae -- Viruses
GEOGRAPHIC DESCRIPTOR(S)- Barcelona (Catalonia, Europe, Palearctic region)
BIOSIS Concept Code(s)- 100[illegible]0069; 1550[illegible]4004; 37[illegible]; 360[illegible]; 37052; 37054; 37056

BIOSYSTEMATIC C DES- 03305; 862
CA REGISTRY(NUMBER(S)- 2-49-2 --SELENIU
CHE MICAL IN XING- print

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2. Se tatus and ortality among HI infected pregna omen in Tanzani
BI 05-31 5-387 NDN- 244 180- -6

get this it

Kupka, R und; Fawzi, afaie ; Hunter, Da d J.; ris, Steve; Msaman Gernard I.; Mugusi, Ferdin ; Spiegelman,

JO RNAL NAME- FA Journal
V 16
NO. 4
March 20 2002
PP. A606.
DOCUMEN TYPE- Meeting
ISSN- 0892-6
ADDRESS Dep tment of Nut n, H ard School ublic Health, 665 H ngton venue, SPH 2, B ston, M 02115, U
CONF RENCE D TE- A 20-24, 2002
CONFERENCE TI E- nual Meeting of rofessional Rese h entists on Exper ental Biology
L NGUAGE- ENGL

In reports from de oped ntries, lo lasma sele m level ere asso iated increased rtalit in HIV-infected i viduals t there no studies fr dev ing countri . We dete ined plasma seleniu concentratio racked survival am 0 HIV-positive pregna women participating i the Tanzania Tr f Vitamins. Mean pla selenium concent was 127 mug/l (SD 3). Ov the course of th year average follo , 7 women (19%) . Mortality rates in the l t, medium, and hest rtiles of plasma enium ere 13.2%, l %, nd 23.7%, respecti y (P for trend= 01). In a Cox proporti l hazards odel adj g for seline body mass i ex age, CD4 nt and gesta nal age men in the l st t e had a ne ly twofold incre ed ris of mor y (hazard ratio HR)= 4, 95% CI=1.28 , while women n the medium ter e had a 5 i ased risk (HR=1.5 9 CI=0.99-2.33) as ared to women the highest te ile (P for tre .02). These data sugg hat selenium ma imp tant for health o HIV-infected indivi Randomized suppl tion trials are ded to d ermine whether e described ass ation causal.

DESCR OR(S)- *Ep miolo (Population); *Infection; *Nu on; *Obstetrics (Huma edicine, Medica ci es); *human (H nidae) --female; *huma (Hominidae) --ho *hu (Hominidae) --patie HIV-1 human i deficiency virus 1 (Re iridae) --pathogen; *A nal Viruses; *Animal rdates; *H ns; *M mmals; *Microorganis *Primates; * rtebrates; *Viruses; * -1 in tion h an immun eficiency virus 1 infec --immune stem disease; *HIV-1 fection human immunodeficiency virus 1 infection --mo ity; *HIV-1

infection --human immunodeficiency virus 1 infection --viral disease; * selenium --plasma level; *pregnancy; *Meeting Abstract; *HIV Infections (MeSH)
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia --Hominidae -- Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae -- Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
GEOGRAPHIC DESCRIPTOR(S)- Tanzania (Africa, Ethiopian region)
BIOSIS Concept Code(s)- 00520; 10069; 13202; 16[illegible]506; 34508; 36006; 3705[illegible]3709[illegible] 37056
BIOSYSTEMATIC CODES- 02623; 86215
CAS REGISTRY/EC NUMBER(S)- *7782-49-2 --SELENIUM
CONCEPT CODE(S)- New Orleans, Louisiana, USA
CHEMICAL INDEXING- Element

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3. Growth and micronutrient disturbances in stable HIV-infected children in Cape Town.
BIO 05-25[illegible]24559 NDN- 244-0[illegible]-9099-9

get this item

[illegible]ey, Brian S.; Abelse[illegible]sa; Co[illegible], Margaret; [illegible]ussey, Gregory D[illegible]; [illegible]ew, Glynis; Sive, Alan A.

JOURNAL NAME- A[illegible] of Tropical Paediatrics
VOL[illegible]2
NO. [illegible]
March, [illegible]2
PP. 19-2[illegible]
DOCUMENT TYPE- Article
ISSN- 027[illegible]6
ADDRESS- E[illegible]ail: beley@ich.uc[illegible] Department of Paedi[illegible]cs and Ch[illegible] Health, Red Cross Children's Hosp[illegible] Rondebosch 7701, South Africa
LANGUAGE- E[illegible]LISH

This prospective stu[illegible]0 stable, HIV-inf[illegible]ed children in an [illegible]ically deprived setting was designed to docume[illegible]hropometric and mic[illegible]utrient distur[illegible]ces. I[illegible]estigations includ[illegible]CD4+ counts, anthropo[illegible]ry [illegible] plasma levels of alb[illegible]in, transth[illegible]in, retin[illegible]binding protei[illegible](RBP[illegible], vitamin[illegible] A, B6[illegible] and B[illegible] and folate, zinc and [illegible]per. T[illegible]edian age w[illegible]25 mon[illegible]Thirty-two per cent [illegible]ad [illegible]ild, 48% m[illegible]erate and 20% severe [illegible]ic[illegible]eatures, and 80% [illegible]ere [illegible]derately or severely i[illegible]munosuppresse[illegible]Twenty-eight per cent [illegible]a weight Z-score < [illegible] and 58% a height Z-score < [illegible]. Many children [illegible] micronutrient def[illegible]ies: albumin (70%), [illegible]thyretin (100%), RBP ([illegible]%), vitamins A (80%[illegible]B6 (37%), E (3[illegible] an[illegible]12 (5%), zinc ([illegible] [illegible] copper (25%). Sixty-two per cent had two or m[illegible]re trace ele[illegible]t or vita[illegible]n deficienci[illegible] here[illegible]s a weak association bet[illegible]een micronutrie[illegible]status a[illegible]disease statu[illegible]Micron[illegible]t concen[illegible]tions did not correlate with ch[illegible]onological age, [illegible]ght-[illegible]age or weight-fo[illegible]ge. [illegible]P was elevated in 53% but did not correlate wit[illegible]ny of the micron[illegible]t concentrations. Mi[illegible]trient deficiencies were more common and micr[illegible]utrient concent[illegible]s lower in children [illegible] 24 months of age.

DESCRIPTOR(S)- *Epidemiology (Population Studies); *Infection; *Nutrition; *Pediatrics (Human Medicine, Medical Science); *Human (Hominidae) --child; *human (Hominidae) --host; *human (Hominidae) --infant; *human (Hominidae) --patient; *human immunodeficiency virus (Retroviridae) --pathogen; *Animal Viruses; *Animals; *Chordata; *Human; *Mammals; *Microorganisms; *Primates; *Vertebrates; *Viruses; *CD4-positive cells --blood and lymphatics; *CD4-positive cells --count; *CD4-positive cells --immune system; *HIV infection human immunodeficiency virus infection --blood and lymphatic disease; *HIV infection human immunodeficiency virus infection --immune system disease; *HIV infection human immunodeficiency virus infection --viral disease; *albumin; *copper; *folate; *retinol-binding protein; *transthyretin; *vitamin A; *vitamin B-12; *vitamin B-6; *vitamin E; * zinc ; *anthropometry; *growth; *micronutrient disturbance; HIV Infections (MeSH)
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia; Hominidae --Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae --Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
GEOGRAPHIC DESCRIPTOR(S)- Cape Town (South Africa, Africa, Ethiopian region)
BIOSIS Concept Code(s)- 00506; 02508; 10060; 10063; 10064; 10069; 13202; 15004; 15006; 21400; 33506; 34502; 34508; 36006; 37052; 37054; 37056
BIOSYSTEMATIC CODES- 06215
CAS REGISTRY/EC NUMBER- *11103-57-4 --VITAMIN A; *1406-18-4 --VITAMIN E; *68-19-9 --VITAMIN B-12; *[illegible]Q --VITAMIN B-6; *7440-50-8 --COPPER; *7440-66-6 --ZINC; *8059-24-4 --VITAMIN B-6
CHEMICAL INDEXING- nt .

Citations from Biological Abstracts: BO1

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4. Plasma zinc , copper, copper:zinc ratio, and survival in a cohort of HIV-infected homosexual men.
BIO 04-346621 NDN-[illegible]833-2

get this item

Lai, Hong; Bau[illegible] Marianna K[illegible] Lai, She[illegible]han; Ma, Fangch[illegible] Shor-Posner, Gail; Trapido, Edward

JOURNAL NAME- JAIDS Journal of Acquired Immune Deficiency Syndromes
VOL. 27
NO. [illegible]
May 1, 2001
PP. 56-6[illegible]
DOCUMENT TYPE- Article
ADDRESS- Department of Epidemiology, Johns Hopkins University School of Hygiene and Public Health, 615 N. Wolfe Street, Room E[illegible]1, Baltimore, MD, 21205, hlai@[illegible]ph.edu, USA
LANGUAGE- ENGLISH

A prospective cohort study of [illegible] HIV-1-positive homosexual men was conducted in Miami,

Florida, U.S.A. to evaluate the association between plasma zinc and copper levels and mortality. Plasma zinc and copper levels were measured at baseline and at semiannual visits. Zinc inadequacy and copper inadequacy were defined as plasma zinc levels <75 (mug/dl) and plasma copper levels <[illegible] (mug/dl), respectively. HIV-related deaths were confirmed by review of death certificates. Cox proportional hazards regression models with time-dependent covariates were used to estimate the relative risks of zinc and copper inadequacy on mortality. Over the average course of the 3.3-year follow-up, [illegible] participants (16%) died of HIV-1-related causes. After adjustment for potential confounders, including low CD4+ cell counts and antiretroviral therapy, zinc inadequacy and copper:zinc ratio >1 (i.e., plasma copper level greater than plasma zinc level) were associated with increased mortality (relative risks (RRs); 95% confidence intervals (CIs), 4.98, 1.30-[illegible] and 8.28, 1.02-66.58, respectively). A protective association was observed between plasma zinc levels and mortality (RR 0.94; 95% CI [illegible]-0.98). Plasma levels of copper were not significantly associated with mortality. These findings suggest that plasma zinc inadequacy or the plasma copper:zinc ratio may be useful predictors of survival in HIV-1 infection. The latter appears to be a stronger predictor.

DESCRIPTOR(S)- *Clinical Immunology; *Human Medicine, Medical Sciences); *Epidemiology (Population Studies); *HIV Infection; *human (Hominidae) --homosexual; *human (Hominidae) --host; *human (Hominidae) --male; *human (Hominidae) --patient; *human immunodeficiency virus-1 HIV-1 (Retroviridae) --pathogen; *Animal Viruses; *Animal; Chordates; *Mammals; *Microorganisms; *Primates; *Vertebrates; *Viruses; *plasma --blood and lymphocytes; * human immunodeficiency virus-1 infection --immune system disease; * human immunodeficiency virus-1 infection; viral disease; *copper ; *copper --ingestion; *mortality; *Infections (MeSH)
BIOLOGICAL TAXONOMY DESCRIPTOR(S)- Hominidae --Animalia; Hominidae --Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae --Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
GEOGRAPHIC DESCRIPTOR(S)- Miami, Florida, USA, North America, Nearctic region)
BIOSIS Concept Code(s)- 10069; 15[illegible]004; 33506; 345[illegible]6006; 37052; 37054; 37[illegible]
BIOSYSTEMATIC CODES- 02623; [illegible]5
CAS REGISTRY/EC NUMBER(S)- [illegible]0-50-8 --COPPER; *7440-66-6 --ZINC
CHEMICAL INDEXING- print

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5. Selenium deficiency is associated with shedding of HIV-1-infected cells in the female genital tract.
BIOSIS 04-25 04-27423 NDN- 199-[illegible]-0447-0

get this item

Baeten, Jared M.; Ba[illegible]on, Daniel D.; Bwayo, Job [illegible]; Hughes, Martin P.; Kr[illegible], Joan K.; Mandaliya, Kishorchan[illegible]; Mostad, Sara B.; Ndin[illegible]ola, Jeckoniah [illegible]; Verbaugh, Julie

JOURNAL NAME- AIDS Journal of Acquired Immune Deficiency Syndromes
VOL. 26
NO. 4
April 1, 2001
PP. 360-364.

DOC[illegible]ENT TYPE- Article
ADD[illegible]SS- Uni[illegible]rsity of Wa[illegible]gton, 325 Ninth Avenue, Se[illegible] W[illegible] 98104-2499:
jba[illegible]n@u.washing[illegible] edu[illegible]A
L[illegible]GUAGE- ENGL[illegible]

[illegible]bjective: To asses[illegible]e rela[illegible]n between seleniu[illegible]ciency and vaginal o[illegible]rvi[illegible] shedding of HIV-1-infected c[illegible]. Design: C[illegible]ss-sectional s[illegible] o[illegible]18 HIV-1 seropositiv[illegible]men in Mombasa, Kenya. Metho[illegible] Vaginal and ce[illegible]al swab[illegible]imens[illegible]ere tested for the pr[illegible]e of HIV-1 DNA by polymer[illegible] chain reaction. Mult[illegible]ria[illegible]gistic regre[illegible]n models, ad[illegible]ting [illegible] CD4 count and vitamin A[illegible]ficiency, were used. Res[illegible] selenium deficie[illegible]y (defined as levels <[illegible] mug/L) was observe[illegible] 11% of the study popula[illegible]n unstratified mu[illegible]ariate analyses, there [illegible] no signif[illegible]ant [illegible]ociation between se[illegible]um [illegible]iciency and vagi[illegible]cervical shedding. I[illegible]trat[illegible]d anal[illegible]ses, how[illegible]er, significant [illegible]ciations [illegible]ame apparent a[illegible] excluding women with [illegible]dictors o[illegible]shedding wi[illegible]trong loca[illegible]ects on the ge[illegible]al tract m[illegible]sa. [illegible]ong women who [illegible] use oral [illegible]ontraceptives an[illegible]ho di[illegible]t have vaginal ca[illegible]dias[illegible]elenium [illegible]ficiency was [illegible]ficant associated with vag[illegible]dding (adjusted odds ra[illegible]OR) 2.9, 95[illegible] confiden[illegible]terval (C[illegible]0-8.8, p = .05). Effect m[illegible]cation was also obser[illegible]he relation bet[illegible]en se[illegible]um deficiency [illegible]d cervical shedding, [illegible] a [illegible]nificant associati[illegible]en a[illegible]ng those wom[illegible] were not using o[illegible] contraceptive pil[illegible] depot [illegible]droxyproges[illegible]e acetat[illegible]d who did [illegible]ave Neisseria gonorrhoeae i[illegible]ion (AOR 2[illegible] 95% C[illegible]-7.0, p = .02). [illegible]nclusi[illegible] W[illegible] found sele[illegible] deficiency t[illegible] associated with [illegible]threefold higher lik[illegible] geni[illegible]muc[illegible] shedding of HI[illegible]-inf[illegible]d cells, suggesting t[illegible]ficiency may increase [illegible]fectiousn[illegible] women with HIV-1. Nu[illegible]al interventions to pr[illegible]IV-1 transmission [illegible]investigati[illegible]

DES[illegible]RIP[illegible]R(S)- *Clini[illegible]mmunolog[illegible](Human M[illegible]icine, Me[illegible]ences[illegible]*Epidemiology (Po[illegible]ulation S[illegible]es); *In[illegible]on; *Nutrition[illegible]hum[illegible](Hominidae) [illegible]ale; *hum[illegible]n (Hominidae) -- h[illegible]t; *human (H[illegible]nid[illegible]--patient; *HIV-1 [illegible] immunodefi[illegible]virus 1 (Re[illegible]viridae) -- [illegible]athogen; *Animal[illegible]es; *Animals; *Chor[illegible]; *Humans[illegible]amm[illegible]; *Microo[illegible]anism[illegible] *Primates; *Verteb[illegible]*Viruses; *genital[illegible]produ[illegible] system; [illegible]D4 cell --i[illegible]ystem; * selenium defic[illegible]y --n[illegible]tional diseas[illegible]HIV-1[illegible]fe[illegible]human immu[illegible]deficien[illegible]us 1 infection --im[illegible]e system [illegible]ase; *H[illegible]1 infection[illegible]an immunodefici[illegible]y v[illegible] i[illegible]ction -- viral disease[illegible]elenium ; *vi[illegible]DN[illegible]*cervical s[illegible]; *vaginal sheddin[illegible]HIV Infec[illegible]s (MeSH); *[illegible]enium/deficiency ([illegible]H)
BIOLO[illegible]AL TAXONOMI[illegible]SCRIPT[illegible](S)- Hom[illegible]idae --An[illegible]alia; H[illegible]inidae -- Ch[illegible]d[illegible] Hominidae --Mam[illegible]ia; H[illegible]ini[illegible]--Primates; H[illegible]inid[illegible] Vertebra[illegible] Retroviridae -- Ani[illegible]Viruses; Retrovirid[illegible]--Microo[illegible]sms; Retroviridae [illegible]ses
GE[illegible]APHIC DESC[illegible]TOR(S)-[illegible]basa (Kenya, Afr[illegible]thiopian region)
B[illegible]SIS [illegible]ncept Cod[illegible]- 02506; [illegible]08; [illegible]062; 10069; [illegible]2; [illegible]203; 16504; 3150[illegible]; 3350[illegible] 34502; 34[illegible]3600[illegible]7052; 370[illegible]37056
BIOSYSTE[illegible]CODES-[illegible]23; 86215
CAS REGIST[illegible]C NUM[illegible]R(S)- *7782-49-[illegible]ELENIUM
CHEMICAL[illegible]ING[illegible]print .

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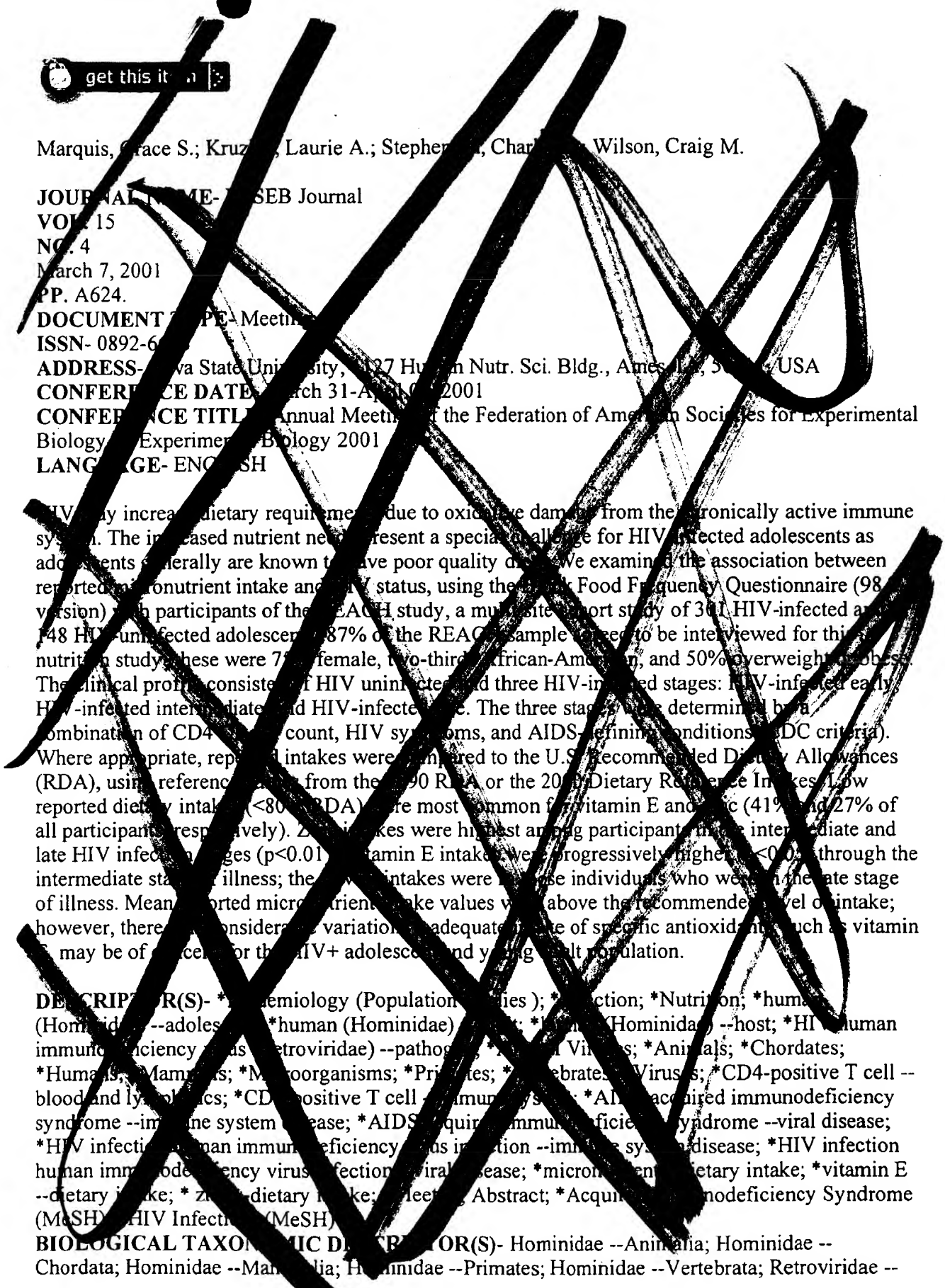
6. Reported micronutrient int[illegible] among HIV-posi[illegible]and HI[illegible]egative adolescents and young adults in the REAC[illegible]dy[illegible]
BIO 04-25 04-274172 N[illegible]- 199-[illegible]-03[illegible]



Marquis, Grace S.; Kruz[illegible], Laurie A.; Stephen[illegible], Charl[illegible] Wilson, Craig M.

JOUR[illegible]ME- FASEB Journal
VOL. 15
NO. 4
March 7, 2001
PP. A624.
DOCUMENT TYPE- Meeting
ISSN- 0892-6
ADDRESS- [illegible]va State Univ[illegible]sity, [illegible]27 Hu[illegible]n Nutr. Sci. Bldg., Ames, [illegible], 5[illegible], USA
CONFERENCE DATE- [illegible]rch 31-A[illegible]1, 2001
CONFERENCE TITLE- [illegible]Annual Meeti[illegible] the Federation of Ame[illegible]n Socie[illegible]es for Experimental Biology [illegible] Experimen[illegible] Biology 2001
LANGUAGE- ENG[illegible]SH

HIV [illegible]y increa[illegible] dietary requi[illegible]me[illegible] due to oxid[illegible]e dam[illegible] from the [illegible]ronically active immune sy[illegible]m. The i[illegible]eased nutrient ne[illegible] present a specia[illegible] challe[illegible]ge for HIV[illegible]fected adolescents as ado[illegible]ents [illegible]erally are known t[illegible]ave poor quality d[illegible] We examin[illegible] the association between re[illegible]orted mi[illegible]onutrient intake and [illegible]V status, using the [illegible]k Food Fr[illegible]quency Questionnaire (98[illegible] version) [illegible]h participants of the [illegible]EACH study, a mu[illegible]site [illegible]ort st[illegible]dy of 30[illegible] HIV-infected a[illegible] 348 HI[illegible] uninfected adolescen[illegible]87% o[illegible] the REAC[illegible] sample [illegible]eed to be inte[illegible]viewed for thi[illegible] nutrit[illegible]n study; these were 7[illegible] female, t[illegible]o-third[illegible] African-Ame[illegible]n, and 50% overweigh[illegible] obes[illegible] The [illegible]linical profi[illegible] consiste[illegible] of HIV unini[illegible]cte[illegible] and three HIV-in[illegible]ed stages: HIV-infected early, H[illegible]V-infected inter[illegible]diate[illegible] and HIV-infecte[illegible]e. The three sta[illegible]s [illegible]e determin[illegible] by a [illegible]ombinati[illegible]n of CD4 [illegible] count, HIV sy[illegible]oms, and AIDS-[illegible]efinin[illegible] conditions [illegible]DC crite[illegible]ia). Where appr[illegible]priate, rep[illegible] intakes were [illegible]mpared to the U.S. [illegible]Recomm[illegible]ded Di[illegible]y Allo[illegible]wances (RDA), usin[illegible] referenc[illegible] [illegible]s from the [illegible]90 R[illegible]A or the 20[illegible] Dietary R[illegible]f[illegible]e In[illegible]kes. Low reported diet[illegible]y intak[illegible] (<80[illegible]DA) [illegible]re most [illegible]mmon f[illegible] vitamin E and [illegible]c (41% [illegible]d 27% of all participant[illegible] resp[illegible]ively). Z[illegible] i[illegible]kes were hi[illegible]est a[illegible]g participant[illegible] in[illegible] inte[illegible]diate and late HIV infec[illegible]n st[illegible]ges (p<0.01 [illegible]tamin E intak[illegible] were progressively higher (p<0.0[illegible] through the intermediate sta[illegible] illness; the[illegible] intakes were [illegible]se individuals who we[illegible] in the late stage of illness. Mean[illegible]orted micro[illegible]trient[illegible]ake values w[illegible] above the recommende[illegible]el of intake; however, there[illegible] considera[illegible] variation[illegible] adequate[illegible]e of specific antioxidant[illegible] such [illegible] vitamin [illegible] may be of [illegible]ce[illegible] for th[illegible]IV+ adolesce[illegible]nd y[illegible]g [illegible]lt population.

DESCRIPTOR(S)- *[illegible]emiology (Population[illegible]ies); *[illegible]ction; *Nutri[illegible]on; *huma[illegible] (Homi[illegible]id[illegible] --adoles[illegible] *human (Hominidae) [illegible]; *[illegible] (Hominidae) --host; *HI[illegible] human immun[illegible]iciency [illegible]us [illegible]etroviridae) --patho[illegible]; *[illegible] Vi[illegible]s; *Ani[illegible]als; *Chordates; *Huma[illegible]s; *Mam[illegible]s; *M[illegible]oorganisms; *Pri[illegible]tes; *[illegible]ebrates; *Virus[illegible]; *CD4-positive T cell -- blood and ly[illegible]ics; *CD[illegible]positive T cell [illegible]mun[illegible]y s[illegible]; *AI[illegible] acquired immunodeficiency syndrome --im[illegible]ne system [illegible]ease; *AIDS [illegible]quir[illegible] immun[illegible]ficie[illegible] syndrome --viral disease; *HIV infecti[illegible]man immun[illegible]eficiency [illegible]us in[illegible]tion --immu[illegible] sy[illegible] disease; *HIV infection human imm[illegible]ode[illegible]ency virus [illegible]fection [illegible]viral [illegible]ease; *micron[illegible]ent[illegible]etary intake; *vitamin E --dietary i[illegible]ke; * zi[illegible] dietary [illegible]ke; [illegible]leet[illegible] Abstract; *Acqui[illegible]nodeficiency Syndrome (MeSH); HIV Infecti[illegible] (MeSH)
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia; Hominidae -- Chordata; Hominidae --Mam[illegible]lia; H[illegible]minidae --Primates; Hominidae --Vertebrata; Retroviridae --

Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
BIOSIS Concept Codes- 00520; 00806; 00808; 10063; 10064; 15000; 15004; 15000; 33506; 34502; 34508; 37006; 37054; 37056
BIOSYSTEMATIC CODES- 8523; 8621
CAS REGISTRY/EC NUMBER(S)- *140 18-4 --VITAMIN B 74 66-6 --ZIN
CONCEPT CODE(S) Orlando, Florida, US
CHEMICAL INDEX Biosciprint .

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7. Improvement of immune functions in HIV infection by sulfur supplementation: Two randomized trials .
BIO 03-20 03-170415 NDN- 199-0046-0153-4

get this item

Droege, Wulf; Beichert, Matthias; Breitkreutz, Raoul; Brust, Juergen; Daniel, Volker; Edler, Lutz; Hack, Volker; Nebe, Carl Thomas; Pittack, Nicole; Schuster, Dieter

JOURNAL NAME- Journal of Molecular Medicine (Berlin).
VOL. 78
NO. 1
2000
PP. 55-62.
DOCUMENT TYPE- Article
ISSN- 0946-2716
ADDRESS- Division of Immunochemistry, Deutsches Krebsforschungszentrum, Im Neuenheimer Feld 280, 69120, Heidelberg, Germany
LANGUAGE- ENGLISH

To determine the therapeutic effect of sulfur amino acid supplementation in HIV infection we randomized 40 patients with antiretroviral therapy (ART; study 1) and 29 patients without ART (study 2) to treatment for 7 months with N-acetyl-cysteine or placebo at an individually adjusted dose according to a defined scheme. The main outcome measures were the change in immunological parameters including natural killer (NK) cell and T cell functions and the viral load. Both studies showed consistently that N-acetyl-cysteine causes a marked increase in immunological functions and plasma albumin concentrations. The effect of N-acetyl-cysteine on the viral load, in contrast, was not consistent and may warrant further studies. Our findings suggest that the impairment of immunological functions in HIV+ patients results at least partly from cysteine deficiency. Because immune reconstitution is a widely accepted aim of HIV treatment, N-acetyl-cysteine treatment may be recommended for patients with and without ART. Our previous report on the massive loss of sulfur in HIV-infected subjects and the present demonstration of the immunoreconstituting effect of cysteine supplementation indicate that the HIV-induced cysteine depletion is a novel mechanism by which a virus destroys the immune defense of the host and escapes immune elimination.

DESCRIPTOR(S)- *Clinical Immunology (Human Medicine, Medical Sciences); *Infection; *Pharmacology; *human (Hominidae) --patient; * human immunodeficiency virus HIV (Retroviridae) --pathogen; *Animal Viruses; *Animals; *Chordates; *Humans; *Mammals;

*Microorganisms; *Primates; *Vertebrates; *Viruses; *natural killer cells --blood and lymphatics; *natural killer cells --function; *natural killer cells --immune system; *T cells --blood and lymphatics; *T cells --function; *T cells --immune system; *cysteine deficiency --nutritional disease; * human immunodeficiency virus infection HIV infection --immune system disease; * human immunodeficiency virus infection HIV infection --viral disease; *N-acetyl-cysteine --replenishing agent-drug; *antiretroviral therapy --therapeutic method; * sulfur amino acid supplementation --supplementation method; * sulfur amino acid supplementation --therapeutic effect; *immune functions; *viral load; *HIV Infections (MeSH)
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia; Hominidae --Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae --Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
BIOSIS Concept Code(s)- 12512; 13203; 15002; 22005; 22008; 33506; 34502; 34508; 36006
BIOSYSTEMATIC CODES- 02623; 86215
CAS REGISTRY/EC NUMBER(S)- *616-91-1 --N-ACETYL-CYSTEINE .

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8. Neuropsychological performance in relationship to selenium status in the Miami HIV-1 infected drug abusers (MIDAS) study .
BIO 03-08 03-064192 NDN- 199-0035-3930-4

Zhang, G.; Wilkie, F.; Shor-Posner, G.; Quesada, J.; Miguez, M.; Lecusay, R.; Lai, S.; Garcia, R.; Campa, A.; Baum, M. K. .

JOURNAL NAME- Society for Neuroscience Abstracts.
VOL. 25.
NO. 1-2.
1999.
PP. 43..
DOCUMENT TYPE- Meeting.
ISSN- 0190-5295.
ADDRESS- Depts of Psychiatry and Behavioral Sciences, and Medicine, Univ of Miami School of Medicine, Miami, FL., USA.
SPONSOR- The Society for Neuroscience.
CONFERENCE DATE- October 23-28, 1999.
CONFERENCE TITLE- 29th Annual Meeting of the Society for Neuroscience, Part 1.

NO-ABSTRACT

DESCRIPTOR(S)- *Infection; *Nervous System (Neural Coordination).; *human (Hominidae) --drug abusers.; *HIV-1 human immunodeficiency virus 1 (Retroviridae) --pathogen; *Animal Viruses; *Animals; *Chordates; *Humans; *Mammals; *Microorganisms; *Primates; *Vertebrates; *Viruses.; *brain --nervous system.; *HIV-1 infection human immunodeficiency virus 1 infection --immune system disease; *HIV-1 infection human immunodeficiency virus 1 infection --viral disease.; * selenium --plasma.; * selenium therapy --therapeutic method.; *mental status; *neurophysical performance; *oxidative stress; *Meeting Abstract.; *MIDAS study ; *HIV

Infections (MeSH).
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Hominidae --Animalia; Hominidae --Chordata; Hominidae --Mammalia; Hominidae --Primates; Hominidae --Vertebrata; Retroviridae --Animal Viruses; Retroviridae --Microorganisms.; Retroviridae --Viruses
BIOSIS Concept Code(s)- 00520; 07003; 12512; 20501; 34502; 36001
BIOSYSTEMATIC CODES- 02623; 86215
CAS REGISTRY/EC NUMBER(S)- *7782-49-2 --SELENIUM.
CONCEPT CODE(S)- Miami Beach, Florida, USA. .

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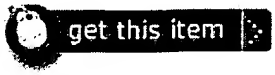
9. Effects of trace metal compounds on HIV-1 reverse transcriptase: An in vitro study .
BIO 02-27 02-270215 NDN- 199-0002-5178-4



Sabbioni, Enrico; Baricevic, Karla; Blanch, Neus; Serra, Miguel-Angel

JOURNAL NAME- Biological Trace Element Research
VOL. 68
NO. 2
May, 1999
PP. 107-120.
DOCUMENT TYPE- Article
ISSN- 0163-4984
ADDRESS- European Commission, Joint Research Centre-Ispra Site, Environment Institute, I-21020 Ispra, Varese, Italy
LANGUAGE- ENGLISH

The effect of 44 different metal ions (Ag+, Al3+, AsO2-, Au3+, Ba2+, Be2+, Bi3+, Cd2+, Ce3+, Co2+, CrO42-, Cr3+, Cs+, Cu2+, Fe3+, Fe2+, Ga3+, Ge4+, Hg2+, Ir4+, La3+, Li+, Mn2+, Mo6+, Ni2+, Os4+, Pb2+, Pt4+, Rb+, Rh3+, Sb5+, SeO42-, SeO32-, Sn2+, Sr2+, Th4+, Tl+, UO22+, VO3-, VO2+, WO42-, Y3+, Zn2+, and Zr4+) on the activity of the reverse transcriptase (RT) of the human immunodeficiency virus (HIV-1) was investigated in vitro. For this study, the RT activity assay was carried out by means of an enzyme-linked immunosorbent assay (ELISA) kit, using the template/primer hybrid poly(A) cntdot oligo(dT)15, which required some modifications: (1) possible interfering metal chelators (such as EDTA) in the original lysis buffer were avoided, and a new buffer (50 mM Tris-NO3, pH 7.8) was used throughout; (2) an amount of 2 ng of RT per well was considered to be optimal after checking the linearity of the reaction with increasing amounts of enzyme; (3) an incubation temperature of 37degreeC and an incubation time of 1 h were chosen after preliminary studies in a wide range of temperature and time. At an incubation temperature gtoreq40degreeC, there was a dramatic loss of enzymatic activity. In addition, when RT alone was preincubated for 1 h at 5degreeC, 25degreeC, and 37degreeC, there was a large (83%) loss of activity at 37degreeC as compared to that at 5degreeC. These results are indicative of enzyme thermolability, which is higher in the absence of substrates. The effect of metal ions on RT activity was tested using two different metal salt concentrations (10-4 M and 10-5 M). Under such experimental conditions, the presence of five metal ions (Pt4+, Ag+, Rh3+, Zn2+, and Hg2+) decreased the RT activity in a dose-response fashion. The observed order of effectiveness with respect to inhibition was Pt4+ >

Ag+ > Rh3+ > Zn2+ = Hg2+. Estimated mean inhibitory concentrations (IC50) were 7.8 muM for (NH4)2PtCl6, 14.1 muM for AgNO3, 46.8 muM for RhCl3, 53.7 muM for Zn(SO)4, and 56.2 muM for Hg(NO3)2. Because these data are of the same order of magnitude as the corresponding values related to other RT inhibitors used in anti-AIDS therapy, metal compounds or their derivatives could give an interesting contribution in the development of new RT inhibitors for clinical use.

DESCRIPTOR(S)- *Enzymology (Biochemistry and Molecular Biophysics); *Pharmacology; * human immunodeficiency virus 1 HIV-1 (Retroviridae) --pathogen; *Animal Viruses; *Microorganisms; *Viruses; *mercury ion; *platinum ion; *rhodium ion; *silver ion; *trace metal compounds; * zinc ion; *HIV-1 reverse transcriptase; *ELISA --detection method; *enzyme activity; *enzyme thermolability; *temperature; *time
BIOLOGICAL TAXONOMIC DESCRIPTOR(S)- Retroviridae --Animal Viruses; Retroviridae --Microorganisms; Retroviridae --Viruses
BIOSIS Concept Code(s)- 10050; 10060; 10802; 22002; 36001
BIOSYSTEMATIC CODES- 02623
CAS REGISTRY/EC NUMBER(S)- *14701-21-4 --SILVER ION; *23713-49-7 --ZINC ION; *7439-97-6 --MERCURY; *7440-06-4 --PLATINUM; *7440-16-6 --RHODIUM .

Cit ms m Federal Research in Progress (F FRP

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10. TRIALS O VITAMIN N HIV PROGR SSION A NSMISSION
FRP 03-03 R01HD32257 8 NDN- 049-0545 172-9

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SUPPORT ORGA ZATION NAM NATIONA NSTIT TE O HD HEALT AND HUMAN D VELO MENT
RESEARCH R ADDRESS- HA ARD CH OF UBLIC HE H, 665 UNTI GTO AVE, BOSTON, M 02 5
AWARD TY oncompeti ontinuation Ty 5)
FISCAL YEA 001

During that las ye s we eened 13,876 eligi anzani pregnant omen fo V infect n and enrolled a follo 1085 consenting H -po tiv bjec ts. Wo en we ra omized n a 2x2 factorial d gn to v min A alone, multivi mins i ding vitamin A mult tami s exclu ing vitamin A, or cebo atory analyses to ermin effect of the su pler nts on ertica transmiss ion HIV ong g. We examine he e t o he supplement on s ondary endpoints for hich ta were mplete (adver re ncy ou mes and T- ll su bsets). Women who received tamins expe nced a sign and sustain increase i CD4 and CD8 cell

counts. We propose to continue following up mothers and children beyond the end date of field activities in the current cycle (1/31/1999). Given that CD4 and CD8 counts are far from perfect surrogate markers of disease progression, it is important to ascertain whether the supplements result in improvement in clinical condition or survival of patients. We also propose to follow up the children born to these mothers to prospectively examine the relationships between biochemical and dietary measures of vitamins A, E, B12, and selenium and progression to AIDS among infected children; and between these nutrients and morbidity (diarrheal disease and lower respiratory infections), growth retardation, and mortality among HIV infected and uninfected children. In preliminary analyses of the current study, we also observed substantial prevalence of HIV-1 subtypes, A, C, D, and recombinants. Limited data from other studies suggest that different HIV-1 subtypes may have different pathogenic potentials. We propose to expand the scope of work of our original nutritional trial to take advantage of a rare opportunity to examine if HIV-1 subtypes are associated with different rates of vertical transmission or with differential rates of disease progression, findings that are relevant for the design of vaccines. We have demonstrated during the first 4 years that the women in the study are prepared to participate in the proposed activities that we can adhere to the research schedule, maintain a high rate of follow up (our annual loss to follow up is only 6 percent), and can manage and analyze the data as it becomes available. Given the fast rate of disease progression among HIV positive children and adults in developing countries, and the limited resources available to address this condition, low cost interventions including micronutrients and effective vaccines are urgently needed for developing countries.

DESCRIPTOR(S)- AFRICA; AIDS; AIDS EDUCATION /PREVENTION; AIDS THERAPY; CLINICAL RESEARCH; DIETARY SUPPLEMENT; HIV INFECTION; HUMAN PREGNANT SUBJECT; HUMAN THERAPEUTIC EVALUATION; INFANT HUMAN (0-1 YEAR); NUTRITION RELATED TAG; PEDIATRIC AIDS; RETINOID; SELENIUM; TOCOPHEROL; VERTICAL TRANSMISSION; VIRUS CLASSIFICATION; VITAMIN B12; VITAMIN THERAPY

Zinc Therapy in Zinc Deficient HIV + Drug Users
FRP 03 1R01DA14966-01 ND - 049-0540-9812-7

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BAUM, MARIANNA K

AGENCY- CRISP
CORPORATE AUTHOR- FLORIDA INTERNATIONAL UNIVERSITY
MIAMI
FLORIDA
SUPPORTING ORGANIZATION NAME- NATIONAL INSTITUTE ON DRUG ABUSE
RESEARCH ADDRESS- FIU SCHOOL OF HEALTH, 11200 SW 8TH ST UNIV PARK CH 2, MIAMI, FL 33
AWARD TYPE New Award Type
FISCAL YEAR-

DESCRIPTION: Deficiency of zinc is prevalent in HAART and non-HAART treated HIV-1 seropositive males and female drug users and has been shown to have a profound impact on HIV

disease status. Low levels of zinc are associated with an increased risk for HIV-1 related mortality, while increasing levels of plasma zinc are associated with slower disease progression. Other investigators have reported that zinc administration in HIV-infected persons stabilized weight, increased CD4 cell count, and reduced the number of opportunistic infections. As drug users are particularly susceptible to zinc deficiency (56 percent have low zinc levels), zinc therapy in HIV-1 infected drug users with low zinc levels (< 0.75 ug/ml) (< 0.75ug/ml), is both timely and warranted. Original study proposal was to randomize 210 participants into the two study arms but the revised application intends to use stratified randomization based on viral load to balance any potential impact of antiretroviral treatment on CD4 cell count and clinical events. The investigators estimate that only 20 percent of the study population will be on lower therapies such as HAART. Zinc supplements will be given at nutritional doses (15 mg for men and 12 mg for women) and compliance to the intervention and safety will be monitored throughout the trial. Clinical and laboratory markers will be assessed at either 3 or 6 month intervals over the 24 month study. The specific aims will determine if zinc therapy in HIV-1 infected men and women who abuse drugs and have low plasma zinc levels will have higher CD4 cell counts, lower viral loads, prolonged time to events, including AIDS defining opportunistic infections, or AIDS related death.

DESCRIPTOR(S)- AIDS THERAPY; ANTIAIDS AGENT; CLINICAL TRIAL; DIET THERAPY; DIETARY SUPPLEMENT; HELPER T LYMPHOCYTE; HIV INFECTION; HUMAN IMMUNODEFICIENCY VIRUS; HUMAN; MORTALITY; HUMAN SUBJECT; HUMAN THERAPY EVALUATION; LEUKEMIA; INTRAVENOUS DRUG ABUSE; NUTRITION DISORDER; NUTRITION; TAG; OPPORTUNISTIC INFECTION; PATIENT ORIENTED RESEARCH; THERAPY COMPLIANCE; VIREMIA; ZINC

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12. NEUROPROTECTION WITH SELENIUM THERAPY IN HIV + DUS
FRP 03-03 5R01DA1279[illegible] BDN- 049-03[illegible]-9063-

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SHOR-POWER AID

AGENCY- NIDA
CORPORATE AUTHOR- UNIVERSITY OF MIAMI
MIAMI
FLORIDA
SUPPORT ORGANIZATION NAME- NATIONAL INSTITUTE ON DRUG ABUSE
RESEARCHER ADDRESS- UNIVERSITY OF MIAMI, 1400 N W 10TH AVE, 6TH FLOOR, MIAMI, FL 33136
AWARD TYPE- Noncompeting Continuation (Type 5)
FISCAL YEAR- 2001

The major neuropsychiatric complications in HIV-disease include cognitive-motor impairment, with HIV-1 seropositive drug users reported to be at higher risk for the development of HIV-associated dementia and more rapid progression to neurologic disability. Oxidative stress can lead to neuronal degeneration, is implicated in HIV-1 disease and appears to be potentiated by drugs of abuse. The primary objective of this and the study is to determine whether supplementation with selenium , a

biologic antioxidant that is required for protecting cells from oxidative damage, can provide neuroprotection and help maintain cognitive function in HIV-l seronegative chronic drug users. Supplementation with selenium has been shown to improve immune systems in HIV/AIDS patients, and inhibit men tal deterioration in neurologically impaired patients. Our preliminary investigations in HIV- l infected drug users indicate that low levels of selenium are associated with decreased mental performance, and that short-term selenium supplementation results in striking potential for improvement in mental function and mood state. Thes e data suggest that administration of selenium may be an effective strategy to prevent loss of cognitive ability. We propose to extend our current NIDA-funded , clinical trial, "Selenium Therapy to Slow Disease Progression in HIV+ IDUs", to compare the effects of selenium to placebo on neuropsychological function. Con sented HIV-l infected drug users (n=120) will be enrolled at the baseline visit of the parent study, prior to supplementation, and administered a psychosocial and cognitive battery. Every 6 months months. Drug use, nutritional, immunologic, oxidative stress, and health status data will be collected by the parent study at the same visit as the cognitive and psychosocial battery, and made available for the proposed project. There is no direct scientific overlap between the two studies. The proposed collaborative and cost-effective research provides a unique opportunity to further our understanding of neurobehavioral pathological function in HIV-l seropositive men and women who use drugs, as well as provide important information necessary for the management of cognitive impairment in HIV-1 disease.

DESCRIPTOR(S)- AIDS DEMENTIA COMPLEX; AIDS THERAPY; CHEMOPREVENTION; CLINICAL RESEARCH; CLINICAL TRIAL PHASE II/III /IV; COGNITION; DIET THERAPY; DIETARY MINERAL; DIETARY SUPPLEMENT; HIV INFECTION; HUMAN SUBJECT; INTRAVENOUS DRUG ABUSE; MENTAL DISORDER PREVENTION; NEURAL DEGENERATION; NEUROPROTECTANT; NEUROPSYCHOLOGICAL TEST; NEUROPSYCHOLOGY; NUTRITION; RELATED TAG; OXIDATIVE STRESS; SELENIUM

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13. SELENIUM THERAPY TO SLOW HIV DISEASE PROGRESSION IN ID
FRP 03-03 5 DA 04 NDN- 049-05 8620-4

get this

SHOR-POSNER, GAIL

AGENCY- CR
CORPORATE AUTHOR- UNIVERSITY OF MIAMI
MIAMI
FLORIDA
SUPPORT ORGANIZATION NAME- NATIONAL INSTITUTE ON DRUG ABUSE
RESEARCHER ADDRESS- UNIVERSITY OF MIAMI, 1400 NW 10 AVENUE, FL 22136
AWARD TYPE- Noncompeting Continuation (Type 5)
FISCAL YEAR- 2001

DESCRIPTION: (Applicant's Abstract) The trace element selenium , is essential for maintaining a viable and responsive immune system. Administered as a chemopreventive agent, it has been shown

to significantly reduce cancer mortality and be protective against a number of viral pathogens in a variety of clinical settings. Recent reports indicate that selenium is predictive of HIV-related prognosis and may have an important role in preventing HIV replication. Our studies in HIV-1 seropositive drug users demonstrate that selenium is a powerful predictor of HIV-1 disease progression and mortality. These compelling findings suggest that selenium administered as a chemopreventive agent may effectively modify HIV disease progression. Our previous experience and a review of the literature indicate that selenium in nutritional doses is feasible and safe in HIV-1 infected individuals. The proposed study is a randomized, double-blind, controlled clinical trial comparing the effects of selenium or placebo in HIV infected male and female drug users. A total of 328 HIV-1 infected adults will be randomized into the trial. At six month intervals, laboratory and clinical markers of disease progression will be evaluated, as well as selenium status and specific drug use. Compliance with the intervention and potential toxicity will be monitored throughout the trial. This proposed investigation will permit us to determine whether supplemental selenium, as a chemopreventive agent, can enhance the immune system and reduce viral load to slow HIV-1 disease progression in male and female drug users.

DESCRIPTOR(S)- AIDS THERAPY; CHEMOPREVENTION; CLINICAL RESEARCH; CLINICAL TRIAL; DRUG ABUSE; HIV INFECTIONS; HUMAN IMMUNODEFICIENCY VIRUS 1; HUMAN MORTALITY; HUMAN SUBJECT; HUMAN; THERAPY EVALUATION; LONGITUDINAL HUMAN STUDY; PATHOLOGIC PROCESS; PLACEBO; SELENIUM .

Citations from MEDLINE(R) DATABASE (2001 TO PRESENT): MED

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14. Diet survey and evaluation of ingested nutrients in a group of HIV patients
MED 03 3 22 664 NDN- 2-0367-0 05-9

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Izquierdo Villarroya, B.; Celaya Pérez, S.; Amigueti Garc.a, J.A.

JOURNAL NAME- Hosp
VOL. 17
2002 Mar-Apr
PP. 97-106
DOCUMENT TYPE- Journal Article
JOURNAL CODE- 9
JOURNAL SUBS- MEDJSIM
ISSN- 02 161
CORPORATE AUTHOR- Servicio de Anestesiología, Reanimación y Terapia del Dolor, Hospital Miguel Ser Espana. blizvi@comz.org
PUBLICATION COUNTRY- Spain
LANGUAGE- Spanish

OBJECTIVE: To study the relationship between nutritional status, immunological condition, clinical progress and food consumption in a group of patients infected with HIV. METHOD: Longitudinal

descriptive study of 30 HIV/AIDS patients. Anthropometric assessment (weight, height, skin folds, upper arm circumference). The intake of nutrients was calculated using a one-week dietary record. RESULTS: The mean amount of energy intake is 2,791 kcal with a 13.48% of protein, 40% of carbohydrates and 45.89% of lipids. The group of patients with weight loss presented a significantly greater proportion of proteins than group with normal weight. Patients with kwashiorkor-like malnutrition presented an intake of proteins which was significantly lower than the group of well-nourished patients. The group of those whose nutritional status improved presented a significantly higher mean percentage of proteins in their diet than the other groups. CONCLUSIONS: The amount of the energy intake by patients is higher than that recommended. The diets show an excessive consumption of fats and a shortage of carbohydrates and proteins. Deficits are observed in vitamin B6 and vitamin E, magnesium and zinc . The increase in intake, by itself, does not improve the health status of the patients, indicating the need to provide them with the necessary dietary supplements from the early stages of their condition.

MEDICAL DESCRIPTOR(S)- Diet; *Diet Surveys; HIV Infections Adult; English Abstract; Female; Human; Longitudinal Studies ; Male
MESH Z TREE NUMBER(S)- E05.272; G06.696.384; E05.318.308.250.600.350; E05.318.308.585.550.350; G03.850.520.308.250.600.350; G03.850.520.308.585.550.350; N05.715.360.300.575.560.300; N05.715.360.850.560.565.300; C02.782.815.615.400; C02.782.801.600; C20.673.480 .

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15. Nutrient intake and body weight in a large HIV cohort that includes women and minorities.
MED 02-10 2183[illegible]2 [illegible]N- 222-031[illegible]5613-8

get this item

Woods, M. N.; Spiegelman, D.; Knox, T. A.; Forrester, J. E.; Connors, J. L.; Skinner, S. C.; Silva, M.; Kim, J. H.; Gorbach, S. L.

JOURNAL NAME- J Am Diet Assoc
VOL- 102
2002 F[illegible]
PP. 203-[illegible]
DOCUMENT TYPE- Journal Article
JOURNAL CODE- 7503061
JOURNAL SUBSET- AIM; MEDJSIM; M[illegible]JSIM
ISSN- 0002-8223
CORPORATE AUTHOR- Department of Family Medicine and Community Health, Tufts University School of Medicine, Boston, Mass 02111, USA. margo.wood@opal[illegible].edu
CONTRACT/GRANT NUMBER- DK4 5734-05.DK; DK; M01-RR00054; NCRR
PUBLICATION COUNTRY- United States
LANGUAGE- English

OBJECTIVE: Evaluate the baseline nutrient intake of an HIV-positive population that includes significant representation from women and minorities and determine the relationship between state

of disease and nutrient intake. DESIGN: Baseline data from a prospective study (Nutrition for Healthy Living). SUBJECTS: Individuals with HIV in the Boston and Rhode Island area (n = 516; 25% were women and 30% were minorities. METHODS: Nutrient intakes from 3-day food records, which included vitamin/mineral supplements, were estimated by gender and nonwhite vs white categories, after grouping by CD4 lymphocyte counts. STATISTICAL ANALYSES: Spearman correlation coefficients, Wilcoxon signed rank test, Wilcoxon rank sum test, chi-square test, and restricted cubic spline model were used for data analyses as indicated. RESULTS: Macronutrient but not micronutrient intakes was statistically and inversely associated with increasing CD4 cell counts. The median intake of micronutrients was higher in the study sample compared with the same age and gender group in CSFII and NHANES III data. However, 25% to 35% of the women in our study sample had dietary intakes of less than 75% of the RDIs for vitamins A, C, E and B6, and iron and zinc . White men had statistically higher intakes of all micronutrients compared with nonwhite men. Body mass index for women and women ranged from 23 to 25. CONCLUSIONS/APPLICATIONS: Median values for micronutrient intake from food plus vitamin/mineral supplements were adequate in the overall population studied, but a large percent of women and minorities had inadequate nutrient intakes and would benefit from dietary assessment and counseling.

MAJOR DESCRIPTOR(S)- *Body Weight; *Energy Intake --PH; *HIV Infections --EP; *Minerals --AD; *Vitamins --AD Adult; CD4 Lymphocyte Count; Cohort Studies; Diet Records; Dietary Carbohydrates --AD; Dietary Fats --AD; Dietary Proteins --AD; Female; Human; Male; Minerals --BL; Minority Groups; Nutrition Assessment; Prospective Studies ; Statistics, Nonparametric; Support, U.S. Gov't, P.H.S.; Vitamins --BL
CAS SUBSTANCE NAME(S)- Dietary Carbohydrates; Dietary Fats; Dietary Proteins; Minerals; Vitamins
MESH Z TREE NUMBER(S)- E01.370.600.[illegible]20; E05.118.[illegible]287; G07.553.[illegible]81.398; G06.696.384.250; [illegible]815.616.400; C02[illegible]00.[illegible]91.400; C20[illegible]480; D01.578.[illegible]011.786 .

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16. Vitamin A supplementation ameliorates the adverse effect of HIV-1, malaria and diarrheal infections on child growth.
MED [illegible]8 2[illegible]0860 NDN-222-0312-[illegible]8[illegible]-9

get item

Vi[illegible]mor, E.; Mbis[illegible]R.; Spiegelman, D.; Hertzmark, E.; [illegible]M.; Peterson, K.; Ndossi, G.; Faw[illegible]W. W.

JOURNAL NAME- Pediatrics
VOL. 10[illegible]
2002 Jan
PP. E6
DOCUMENT TYPE- Clinical Trial; Journal Article; Randomized Controlled Trial
JOURNAL CODE- [illegible]0376-[illegible]2
JOURNAL SUBSET- AIDSAIM; MEDSIM
ISSN- 1098-4275
CORPORATE AUTHOR- Department of Nutrition, Harvard School of Public Health, Boston, Massachusetts. Department of Epidemiology, Harvard School of Public Health, Boston,

Massachusetts, U... evillamo@...ph.harvard.edu
PUBLICATION COUNTRY: United States
LANGUAGE: English

OBJECTIVE: Evidence from animal experiments and observational studies in humans suggests that vitamin A plays a fundamental role in physical growth. However, results from vitamin A supplementation trials in children are inconsistent; while some did not find an overall effect on growth, others found benefits only among specific groups including children with low serum retinol concentrations or short duration of breastfeeding. The apparent lack of an overall effect of vitamin A on growth could be attributed to important specific distribution of conditions that affect both growth and the response to supplementation, e.g., baseline vitamin A status, deficiency of other nutrients (e.g., zinc), and the presence of infectious diseases. Human immunodeficiency virus (HIV) infection, malaria, and diarrheal disease adversely affect growth and are associated with increased prevalence of vitamin A deficiency. We hypothesized that vitamin A supplementation could ameliorate the adverse effect of these infections on child growth. METHODS: We conducted a randomized, clinical trial among 7... Tanzanian children who were 6... months of age and admitted to the hospital with pneumonia. Children were assigned to one of two doses of 200 000 IU vitamin A (half that dose if 6012 months) or placebo on the day of admission, second dose on the following day, and third and fourth doses 4 and 8 months after discharge from the hospital, respectively. Anthropometric measurements were obtained at baseline and at monthly visits to the study clinics during 12 months after the initial hospitalization. Surveillance of the incidence and severity of diarrhea and respiratory infections was conducted during bi-weekly visits, alternately at a study clinic and the child's home, using a pictorial diary that the mothers were trained to use. A blood sample was drawn at baseline for determination of HIV status, malaria infection, and hemoglobin levels. We used mixed effects models to compare estimated rates of weight and height increases over 1 year of follow-up between treatment arms, overall and within levels of HIV status, malaria, and other possible baseline effect modifiers. We also assessed the potential modulating effect of vitamin A on the risk of stunting (height-for-age 60... standard deviations of the gender-specific National Center for Health Statistics median reference) attributable to diarrheal and respiratory infections during follow-up, in the subset of children who were not stunted at baseline. A similar approach was followed for wasting (weight-for-height 60... standard deviations of the reference median). Cox regression models were used to estimate relative risks and 95% confidence intervals (CI), treating episodes of infection as time-dependent covariates. RESULTS: A total of 554 children had at least 2 follow-up measurements of height or weight and constituted the study base. Baseline characteristics did not differ significantly by treatment arm. Seventy-three percent of the children were 602 years of age, and 37% were 6012 months; 32% were stunted at baseline and 9% were wasted. Malaria (Plasmodium falciparum) and HIV infection were found in 24% and 9% of the children, respectively. Median duration of follow-up was 351 days, with 10 measurements/child, on average, irrespective of treatment assignment. Supplementation with vitamin A among children who were 6012 months and were 6018 months of age resulted in a significant length increase. Four months after the first dose, infants who were HIV positive in the vitamin A arm had gained, on average, 1.8 cm (95% CI: 1.0-4.6) more than children who received placebo, whereas no effect was observed among infants who were HIV negative (difference at 4 months: 0.2 cm; 95% CI: -0.8-0.5). Children who were 6012 months of age and had malaria at enrollment experienced a 47-g (95% CI: 71-147) higher yearly weight gain attributable to vitamin A; among children without malaria, however, the supplements did not have a significant effect (-57 g; 95% CI: ...348). These results remained unchanged after controlling for indicators of the socioeconomic and nutritional status at baseline. Linear growth was also improved by vitamin A among children from households with poor water supply (0.8 cm/year; 95% CI: 0-...5) but not children with tap water in the house or compound (-1.0 cm/year; 95% CI: -1.9-0). Weight gain was greater among children in the mid-upper arm

circumference below the 25th percentile of the age-specific distribution at baseline (458 g/year; 95% CI: 1-905), but no benefit was evident among children with higher initial upper arm circumference. The risk of stunting associated with episodes of persistent diarrhea (lasting 14 or more days) during follow-up was virtually eliminated by vitamin A supplementation. Among children in the placebo group, the average risk of stunting associated with 1 or more episodes of persistent diarrhea between 2 consecutive visits was 5.2 times higher (95% CI: 1.1-11.2) than that of children without diarrhea or with acute episodes. In contrast, among children who received vitamin A, there was virtually no risk of stunting associated with persistent diarrhea (relative risk: 1.0; 95% CI: 0.3-1.3). This effect was slightly attenuated after controlling for the number of household possessions, gender, baseline low arm circumference, infection with presence of malaria parasites in blood. Vitamin A supplements did not modify the associations between respiratory infections and the risk of stunting or wasting. CONCLUSION: Vitamin A supplementation improves linear and ponderal growth in infants who are uninfected with HIV and malaria, respectively, and decreases the risk of stunting associated with persistent diarrhea. Supplementation could constitute a low-cost effective intervention to decrease the burden of growth retardation in settings where infectious diseases are highly prevalent.

MEDICAL DESCRIPTOR(S)- *Acquired Immunodeficiency Syndrome --CO; *Diarrhea --CO; *Growth Disorders --PC; *Malaria --CO; *Vitamin A --AD Body Weight; Body Weight; Child, Preschool; Dietary Supplements; Double-Blind Method; Female; Follow-Up Studies ; Growth Disorders --ET; Human; Infant; Male; Support, Non-U.S. Gov't
CAS REGISTRY/EC NUMBER(S)- *11103-57-4
CAS SUBSTANCE NAME(S)- Vitamin A
MESH TREE NUMBER(S)- C02.782.615.616.400.040; C02.800.801.400.640; C02.839.040; C20.673.480.040; C06.405.469.237; C23.888.821.214; G03.550.393; C03.752.250.552; D02.455.826.291.760.248; D11.587.761.700.860; D12.776.652

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17. Micronutrients and child health: studies of international nutrition and HIV infection.
MED 02-0[illegible]215[illegible]4 NDN- 22[illegible]0303[illegible]0

get

Dug[illegible]n, C.; Fawzi, W.

JOURNAL NAME- Nutr Rev
VOL. 59
NO. 11
2001 Nov
PP. 358-69
161 Reference(s)
DOCUMENT TYPE- Journal Article; Review; Review, Tutorial
JOURNAL CODE- 037[illegible]05
JOURNAL SUBSET- [illegible]ISI
ISSN- 0029-[illegible]43
CORPORATE AUTHOR- Department of Pediatrics, Harvard Medical School, Boston, MA 02115, USA.

CONTRACT/GRANT NUMBER- D43 TW00004.TW.FIC; D43 TW[illegible].FIC; P30-DK4056[illegible]DK; R01 32257.PHS; U01 45441.PHS
PUBLICATION COUNTRY- United States
LANGUAGE- English

Increasing data link micronutrient deficiencies to excess childhood morbidity and mortality, and similar relationships have been noted in the study of nutrition and HIV infection. We review epidemiologic studies that have examined the relationship between micronutrient deficiencies and health outcomes in childhood and HIV infection, as well as clinical trials of micronutrient supplementation. Vitamin A supplementation among communities at risk of deficiency effectively reduces mortality and morbidity in children younger than age 5, and vitamin A may be especially effective in HIV-infected children. Vertical transmission of HIV has not to date been affected by maternal micronutrient supplementation. In children with poor dietary zinc intake and/or bioavailability, zinc supplementation reduces the incidence and severity of diarrheal diseases, as well as the occurrence of pneumonia. Vitamin A therapy has not been associated with improved growth, whereas some trials have shown that zinc supplementation is associated with greater increments in height. Further trials of micronutrient supplementation are warranted.

MEDICAL DESCRIPTOR(S)- *[illegible] Infections --DT; *Micronutrients --AD; *Micronutrients --[illegible]trition Disorders --DT; Child; Child, Preschool; Dietary Supplements; Disease Transmission, Vertical --PC; Female; HIV Infections -- MO; HIV Infections --TM; Human; Infant; Infant, Newborn; Male; Mortality; Nutrition Disorders -- MO; Pregnancy; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.; Treatment Outcome; Vitamin A --AD; Vitamin A Deficiency --DT; Vitamin A Deficiency --MO; Zinc --AD; Zinc --DF
CAS REGISTRY/[illegible]UMBER(S)- *11103-57-4; 7440-66-6
CAS SUBSTANCE NAME(S)- Micronutrients; Vitamin A; Zinc

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18. Structure of the human zinc finger protein HIVEP3: molecular cloning, expression, exon-intron structure, and comparison with paralogous genes HIVEP1 and HIVEP2.
MED 01-08 21100886 IDN- [illegible]-023[illegible]723-1

get this item

[illegible]icar, M.D.; Liu, Y.; Allen, C. E.; [illegible]. C.

JOURNAL NAME- Genomics
VOL- 71
2001 [illegible] 1
PP. 89[illegible]0
DOCUMENT TYPE- [illegible]rticle
JOURNAL CODE- [illegible]N; 8800[illegible]
JOURNAL [illegible]- MEDJSIM
ISSN- 0888-[illegible]
CORPORATE AUTHOR- Department of [illegible] Virology, Immunology, and Medical Genetics, College of Medicine and Public Health, The Ohio State University, Columbus, Ohio 43210, USA.

CONTRACT/GRANT NUMBER- GM48798.GM.NIGMS; [redacted]6058.CA.NCI
PUBLICATION COUNTRY- United States
LANGUAGE- English

Here we report the cloning and characterization of HIVEP3, the newest member in the human immunodeficiency virus type 1 enhancer-binding protein family that encodes large zinc finger proteins and regulates transcription via the kappaB enhancer motif. The largest open reading frame of HIVEP3 contains 2481 aa and is approximately 80% identical to the mouse counterpart. The HIVEP3 gene is located in the chromosomal region 1p34 and is at least 300 kb and 10 exons. RNA studies show that multiple HIVEP3 transcripts are differentially expressed and regulated. Additionally, transcription termination occurs in the ultimate exon, exon 10, within exon 6. Therefore, HIVEP3 may produce protein isoforms that contain or exclude the carboxyl DNA binding domain and the leucine zipper by alternative RNA splicing and differential polyadenylation. Sequence homologous to HIVEP3 exon 6 is not found in mouse nor are the paralogous genes HIVEP1 and HIVEP2. Zoo-blot analysis suggests that sequences homologous to the human exon 6 are present only in primates and cow. Therefore, a foreign DNA containing a termination exon likely was inserted into the HIVEP3 locus relatively recently in evolution resulting in the acquisition of novel gene regulatory mechanisms as well as the generation of structural and functional diversity. Copyright 2001 Academic Press.

MEDICAL DESCRIPTOR(S)- *Carrier Proteins --CH; *DNA-Binding Proteins --CH; DNA-Binding Proteins --ME; Amino Acid Sequence; Animal; Blotting, Northern; Blotting, Southern; Brain --ME; Carrier Proteins --GE; Chromosomes, Human, Pair 1; Cloning, Molecular; Comparative Study ; Cosmids; DNA, Complementary --ME; DNA-Binding Proteins --BI; Exons; Expressed Sequence Tags; Gene Library; Human; Introns; Mice; Models, Genetic; Molecular Sequence Data; Oligonucleotide Probes --ME; Open Reading Frames; Phylogeny; Poly A --ME; Protein Isoforms; Protein Structure, Tertiary; Reverse Transcriptase Polymerase Chain Reaction --ME; Sequence Homology, Amino Acid; Support, U.S. Gov't, P.H.S.; Tissue Distribution; Transcription, Genetic; Zinc Fingers

CAS REGISTRY/EC NUMBER(S)- *138980-56-5; *24937-83-5
CAS NOMENCLATURE NAME(S)- Carrier Proteins; Cosmids; DNA, Complementary; DNA-Binding Proteins; HIV-enhancer binding protein EP3; Oligonucleotide Probes; PRDII-BF1 protein; Protein Isoforms; HIV-enhancer binding protein EP2; Poly A

Citations from MEDLINE(R) DATABASE (1997 TO 2000); ME1

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19. State of selected nutrients and progression of human immunodeficiency virus type 1 infection.
MED 00-1[redacted]042461 ISSN-[redacted]0189-3024-1

get this item

Bogden, J. D.; Kemp, F. W.; Han, S.; Li, W.; Bruening, K.; Denny, T.; Oleske, J. M.; Lloyd, J.; Baker, H.; Perez, G.; Kl[redacted] P.; Skurnick, J.; L[redacted]

JOURNAL N[redacted]ME- Am J [redacted]n Nutr
VOL. 72
NO. 3
2000 Sep
PP. 809-15
**DOCUMENT TY[redacted]JOURNAL ARTICLE
JOURNAL CODE-[redacted]EY
JOURNAL SUBS[redacted]-MEDJSM; ME[redacted]SA
ISSN- 0002-9165
CORPORATE AUTHOR- Department [redacted]reve[redacted]edicine and Community H[redacted]e University of Medicine and [redacted]entistry [redacted]ew Jerse[redacted]y Jersey Medical Schoo[redacted]Ne[redacted]rk
bogden@umdnj.edu
CONTRACT/GRANT NUME[redacted] AI-95013.A[redacted]AID
PUBLICATION COUNTRY[redacted]ITED STA[redacted]
LANGU[redacted]GE- English

BACK[redacted]GROUND: Imm[redacted]ne function is [redacted]igh[redacted] dependent on nutritional status[redacted]ause the larg[redacted] mass and h[redacted]gh rate of cell[redacted]r turnover of the [redacted]une system make it a major use[redacted]r [redacted]rients. Fur[redacted]thermore, nutri[redacted]nt requirements may [redacted]increased during acute and chr[redacted]c infe[redacted]ons, inclu[redacted]ling HI[redacted]-1 infection. OBJECTIVE: The c[redacted]nt [redacted]udy was d[redacted]signed to assess[redacted]ations an[redacted]g HIV-progression [redacted]d 11 nutritional and de[redacted]graphi[redacted] variables. DESIGN: Th[redacted]articipants w[redacted]106 [redacted]IV-infected ou[redacted]patients and 29 uninfec[redacted]control st[redacted]jects (n = 89 men an[redacted]6 women; age rang[redacted]3[redacted]7 y). The [redacted]IV-infecte[redacted] subjects rep[redacted]ented a broa[redacted]ge of disease p[redacted]ression. RESULTS: We found[redacted]ower concentra[redacted]ns of pl[redacted]a and eryth[redacted]e magnesium a[redacted] of erythrocyte reduced glu[redacted]athione beginning ea[redacted]in t[redacted]course of [redacted]IV-1 in[redacted]tion. Signi[redacted]antly decreased hematocrit and i[redacted]creased serum copper con[redacted]ation deve[redacted]ed only l[redacted] in the c[redacted]rse of the disease. Statistically signif[redacted]ant univariate associa[redacted]were [redacted]nd between th[redacted]CD4([redacted]T lymphocyte count and hemato[redacted]rit, plasma magnesi[redacted] co[redacted]tion, and plasma[redacted]c [redacted]ncentration. The lowest [redacted]e magnesi[redacted]m concentrations [redacted]curred[redacted]IV-infected subjec[redacted]o consumed alcoholi[redacted]erag[redacted] Independen[redacted] variables tha[redacted]ere si[redacted]ific[redacted]oint predictors o[redacted]D4(+) cell count i[redacted]ultiple regression an[redacted]lyses were[redacted]mat[redacted]t and pl[redacted]a free cholin[redacted] zinc concent[redacted]ns. These [redacted]ctors together explain[redacted]d 43% [redacted]th[redacted]riability in C[redacted]+) cell co[redacted]ts. CONCLUS[redacted]N: The resul[redacted]rovide evidence that com[redacted]ron[redacted]ed[redacted]ritional and antiox[redacted]t sta[redacted] begi[redacted]early [redacted]the course of [redacted]-1 infection and may c[redacted]to disease progression.

MEDICAL DESCR[redacted]OR(S)- *HIV Infections --PP[redacted]HIV[redacted]Nu[redacted]tion Adult; A[redacted]hol Drinking; Anti-HIV Ag[redacted]s --TU; Cross-Sectional St[redacted]es [redacted]4 L[redacted]ocyte Count[redacted]isease Progression; Female; Hu[redacted]: HIV Infections --BL; [redacted]/[redacted]ections --D[redacted], Male; Mi[redacted] Age; [redacted]ference Values; Support,[redacted]n-U.S. Gov't; Suppo[redacted]. Gov't, P.H.S.
CAS R[redacted]STRY/EC NUM[redacted]R(S)- *0
CAS SUBSTA[redacted] Anti-HIV Agents

20. Improvement of immune functions in HIV infection by sulfur supplementation: two randomized trials Ýsee comments¨
MED 00-08 20220780 NDN- 194-0175-3123-5

get this item

Breitkreutz, R.; Pittack, N.; Nebe, C. T.; Schuster, D.; Brust, J.; Beichert, M.; Hack, V.; Daniel, V.; Edler, L.; Droge, W.

JOURNAL NAME- J Mol Med
VOL. 78
NO. 1
2000
PP. 55-62
DOCUMENT TYPE- CLINICAL TRIAL; JOURNAL ARTICLE; RANDOMIZED CONTROLLED TRIAL
JOURNAL CODE- B8C
JOURNAL SUBSET- MEDJSM
ISSN- 0946-2716
CORPORATE AUTHOR- Deutsches Krebsforschungszentrum, Division of Immunochemistry, Heidelberg, Germany.
COMMENTS IN- Comment in:, J Mol Med, 2000 ;78(1):1-2
PUBLICATION COUNTRY- GERMANY
LANGUAGE- English

To determine the therapeutic effect of sulfur amino acid supplementation in HIV infection we randomized 40 patients with antiretroviral therapy (ART; study 1) and 29 patients without ART (study 2) to treatment for 7 months with N-acetyl-cysteine or placebo at an individually adjusted dose according to a defined scheme. The main outcome measures were the change in immunological parameters including natural killer (NK) cell and T cell functions and the viral load. Both studies showed consistently that N-acetyl-cysteine causes a marked increase in immunological functions and plasma albumin concentrations. The effect of N-acetyl-cysteine on the viral load, in contrast, was not consistent and may warrant further studies. Our findings suggest that the impairment of immunological functions in HIV+ patients results at least partly from cysteine deficiency. Because immune reconstitution is a widely accepted aim of HIV treatment, N-acetyl-cysteine treatment may be recommended for patients with and without ART. Our previous report on the massive loss of sulfur in HIV-infected subjects and the present demonstration of the immunoreconstituting effect of cysteine supplementation indicate that the HIV-induced cysteine depletion is a novel mechanism by which a virus destroys the immune defense of the host and escapes immune elimination.

CHECK TAG(S)- Female; Human; Male
MEDICAL DESCRIPTOR(S)- *Acetylcysteine --TU; *Acquired Immunodeficiency Syndrome --DT; *HIV-1 Acetylcysteine --AD; Acquired Immunodeficiency Syndrome --BL; Acquired Immunodeficiency Syndrome --IM; Acquired Immunodeficiency Syndrome --VI; Administration, Oral; Adolescence; Adult; Antigens, CD --ME; Double-Blind Method; Glutamine --BL; Interleukin-6 --BL; Killer Cells, Natural --ME; Middle Age; Placebos; Serum Albumin --ME; T-Lymphocytes --ME; Thioredoxin --BL; Viral Load
CAS REGISTRY/EC NUMBER(S)- *0; *0; *0; *0; *52500-60-4; *56-85-9; *616-91-1
CAS SUBSTANCE NAME(S)- Antigens, CD; Interleukin-6; Placebos; Serum Albumin; Thioredoxin; Glutamine; Acetylcysteine .

21. A recent study shows selenium supplementation benefits HIV patients: Selenomax decreases risk of development of depressed-dejected mood state Ýnews¨
MED 00-07 20215514 NDN- 194-0173-8388-0

get this item

NO-AUTHOR

JOURNAL NAME- J Assoc Nurses AIDS Care
VOL. 11
NO. 2
2000 Mar-Apr
PP. 103
DOCUMENT TYPE- NEWS
JOURNAL CODE- A7P
JOURNAL SUBSET- MEDJSM; MEDJSN
ISSN- 1055-3290
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

NO-ABSTRACT

CHECK TAG(S)- Female; Human; Male
MEDICAL DESCRIPTOR(S)- *Depression --DT; *Depression --VI; *HIV Infections --PX; *HIV-1; * Selenium --TU
CAS REGISTRY/EC NUMBER(S)- *7782-49-2
CAS SUBSTANCE NAME(S)- Selenium .

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22. Development of an instrument to assess nutritional risk factors for children infected with human immunodeficiency virus.
MED 00-05 20184320 NDN- 194-0166-6594-3

get this item

Heller, L.; Fox, S.; Hell, K. J.; Church, J. A.

JOURNAL NAME- J Am Diet Assoc
VOL. 100
NO. 3
2000 Mar
PP. 323-9
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- H6F

JOURNAL SUBSET- MEDJSA; MEDJSM
ISSN- 0002-8223
CORPORATE AUTHOR- Division of Clinical Immunology and Allergy, Childrens Hospital of Los Angeles, University of Southern California School of Medicine, USA.
CONTRACT/GRANT NUMBER- NHLBI 38633-06; MOIRR00240
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

OBJECTIVE: To produce a simple and effective instrument to evaluate and monitor the nutritional risk of children infected with the human immunodeficiency virus (HIV). DESIGN: The test instrument was developed in consultation with 5 physicians, 5 nutritionists, and 5 social workers with expertise in caring for HIV-infected children. Patient information was collected through medical record review for 19 sociodemographic, 10 anthropometric, 4 biochemical, 6 dietary intake, and 19 medical factors. As a part of routine nutrition care, anthropometric data were obtained and the caregiver was asked to complete a 3-day diet record. Also recorded were the most recent CD4+ T-cell numbers and serum HIV p24 antigen and plasma HIV RNA levels. SUBJECTS/SETTING: Thirty-nine HIV-infected children were selected using quota sampling; that is, subjects were stratified by clinical class as defined by the Centers for Disease Control and Prevention. STATISTICAL ANALYSIS: The severity or degree of potential nutritional risk in each section (anthropometric, biochemical, dietary intake, and medical data) was graded (0 to 4, 0 = low risk) and summed. Reliability of internal consistency was determined through covariance matrixes. Validity was determined through Pearson product moment correlation coefficients to measure convergent and divergent validity; predictive validity was determined using analysis of variance. Correlation for validity was compared to 6 selected dependent variables: weight for height, weight growth velocity, lean body mass, serum albumin level, CD4+ T-cell numbers, and quantitative plasma HIV RNA levels. RESULTS: Of the 38 factors that were analyzed for reliability, 11 fell in the strongly reliable range: height for age, weight for age, clinical class, somatic protein stores, mid-arm circumference, weight for height, serum albumin, immunologic status, body mass index, energy intake, and opportunistic infection. CONCLUSIONS: Anthropometric, dietary intake, and medical data were reliable indicators of nutritional risk. The entire instrument was reliable after 8 of the weakest items were removed. The instrument was found to be valid and a good predictor of nutritional risk in HIV-infected children.

CHECK TAG(S)- Female; Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Diet; *HIV Infections --PP; *Nutrition Disorders --ET Adolescence; Anthropometry; Child; Child, Preschool; Cross-Sectional Studies ; Diet Records; Dietary Proteins --AD; Energy Intake; HIV Infections --CO; Infant; Iron --BL; Medical Records; Nutrition Disorders --EP; Nutrition Policy; Prealbumin --AN; Reproducibility of Results; Risk Factors; Serum Albumin --AN; Zinc --BL
CAS REGISTRY/EC NUMBER(S)- *0; *0; *0; *7439-89-6; *7440-66-6
CAS SUBSTANCE NAME(S)- Dietary Proteins; Prealbumin; Serum Albumin; Iron; Zinc .

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23. Contribution of zinc to reduce CD4+ risk factor for 'severe' infection relapse in aging: parallelism with HIV .
MED 99-10 99335120 NDN- 194-0140-9182-0

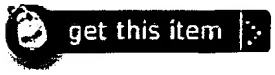
Mocchegiani, E.; Muzzioli, M.; Gaetti, R.; Veccia, S.; Viticchi, C.; Scalise, G.

JOURNAL NAME- Int J Immunopharmacol
VOL. 21
NO. 4
1999 Apr
PP. 271-81
DOCUMENT TYPE- CLINICAL TRIAL; CONTROLLED CLINICAL TRIAL; JOURNAL ARTICLE
JOURNAL CODE- GRI
JOURNAL SUBSET- MEDJSM
ISSN- 0192-0561
CORPORATE AUTHOR- Immunology Centre, Gerontol, Res. Dept., N. Masera, Italian National Research Centres on Aging, Ancona. e.mocchegiani@inrca.it
PUBLICATION COUNTRY- ENGLAND
LANGUAGE- English

Aging and HIV have parallelism in immunodeficiency status because of the appearance of infections or relapse leading to death in both conditions. HIV-RNA is predictor for HIV progression correlated with CD4+ depletion. CD4+ and plasma zinc levels (zincaemia) may be predictors for infections relapse in aging because of zinc relevance for normal immune efficiency against infections and for CD4+ growth. Moreover, zincaemia decreases in aging and infection. A total of 67 elderly subjects affected by infections resistant to antibiotic therapy were recruited. A total of 28 HIV+ subjects with HAART therapy were also used. CD4+ depletion (507 mm3) and zincaemia deficiency (76 microg/dl), as compared to CD4+ (700-1100 mm3) and zincaemia (85-100 microg/dl; age 40-75 years) normal ranges, are possible limits (Cox hazard regression) for severe infections relapse, such as chronic obstructive bronchitis and bronchopneumonia by bacteria or Candida complication, in aging. CD4+ and zincaemia values are within the lower limits of normal range in urinary tract infections. Zincaemia and HIV-RNA or CD4+ are inversely correlated ($r = 0.57$ and $r = 0.72$, respectively) in HIV+ HAART treated subjects. Consequently there is no appearance of opportunistic infections. Parallelism between aging and HIV may exist because of the resemblance in marked zinc deficiency and CD4+ depletion with high scores in relative risks for severe infections relapse. Supplementing zinc (12 mg Zn++/day) for one month in infected elderly subjects and HAART therapy in HIV+ subjects reduces risk scores in CD4+ and zincaemia deficiencies for infections relapse, suggesting that the zinc beneficial effect may be independent either by HIV-virus or pathogen agents involved. While HAART may reduce the occurrence of opportunistic infections in HIV by means of also major zinc bioavailability, supplementing zinc can be recommended in elderly people as resistance to infections. Since zinc deficiency is correlated with CD4+ depletion, this latter may also be good diagnostic marker to detect 'clear immunodeficiency' in aging, as in HIV condition.

CHECK TAG(S)- Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't
MEDICAL DESCRIPTOR(S)- *Aging --IM; *HIV Infections --IM; * Zinc --IM; * Zinc --TU Adult; Aged; Double-Blind Method; HIV Infections --BL; HIV Infections --DT; Middle Age; Retrospective Studies ; Risk Factors; Zinc --BL; Zinc --DF
CAS REGISTRY/EC NUMBER(S)- *7440-66-6
CAS SUBSTANCE NAME(S)- Zinc .

24. Hypocalcaemia in HIV infection and AIDS.
MED 99-06 99195523 NDN- 194-0123-8149-1



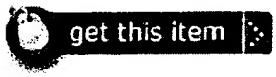
Kuehn, E. W.; Anders, H. J.; Bogner, J. R.; Obermaier, J.; Goebel, F. D.; Schlondorff, D.

JOURNAL NAME- J Intern Med
VOL. 245
NO. 1
1999 Jan
PP. 69-73
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- I2G
JOURNAL SUBSET- MEDJSM; MEDJSX
ISSN- 0954-6820
CORPORATE AUTHOR- Medizinische Poliklinik, Ludwig Maximilians University Munchen, Germany. anneli.ivarsson@epiph.umu.se
PUBLICATION COUNTRY- ENGLAND
LANGUAGE- English

OBJECTIVES: To study the prevalence and possible mechanisms of hypocalcaemia in HIV infection and AIDS. SUBJECTS: 828 patients with HIV infection or AIDS and 549 controls. INTERVENTIONS: Measurements of total serum calcium and albumin levels. Parameters of calcium homeostatis were determined in a subgroup of 21 hypocalcaemic AIDS patients. RESULTS: Mean serum calcium was 2.34 +/- 0.13 mmol L-1 in the HIV group vs. 2.46 +/- 0.10 mmol L-1 in controls ($P < 0.0001$). After adjusting for serum albumin, hypocalcaemia was present in 6.5% of the HIV group vs. 1.1% of controls. Mean serum calcium was declining according to CDC groups, and differed significantly from controls in each group. Regression coefficients of cacium vs. albumin were 0.147 amongst HIV-infected patients and 0.106 for controls. In the subgroup of hypocalcaemic patients with AIDS, 10/21 had vitamin D deficiency, six of these with low ionized calcium levels. Low serum PTH was found in 2/21 patients. Magnesium deficiency in 1/21. Of the remaining eight patients, only one had secondary hyperparathyroidism, while the other seven lacked an adequate PTH response, despite low ionized calcium levels in four subjects. CONCLUSIONS: Mean serum calcium concentrations were lower through all CDC stages, irrespective of albumin, resulting in a higher prevalence of hypocalcaemia in HIV-positive patients compared with controls. In a considerable number, this seems to be caused by vitamin D deficiency and potentially a lack of adequate PTH secretion, but further studies are needed to confirm this.

CHECK TAG(S)- Female; Human; Male; Support, Non-U.S. Gov't
MEDICAL DESCRIPTOR(S)- *Calcium --BL; *Hypocalcemia --VI; *HIV Infections --CO Acquired Immunodeficiency Syndrome --CO; Adult; Case-Control Studies ; Hypocalcemia --BL; Hypoparathyroidism --VI; HIV Infections --BL; Middle Age; Regression Analysis; Serum Albumin --ME
CAS REGISTRY/EC NUMBER(S)- *0; *7440-70-2
CAS SUBSTANCE NAME(S)- Serum Albumin; Calcium

25. Sodium selenite and N-acetylcysteine in antiretroviral-naive HIV-1-infected patients: a randomized, controlled pilot study .
MED 98-12 98313699 NDN- 194-0099-6813-9



Look, M. P.; Rockstroh, J. K.; Rao, G. S.; Barton, S.; Lemoch, H.; Kaiser, R.; Kupfer, B.; Sudhop, T.; Spengler, U.; Sauerbruch, T.

JOURNAL NAME- Eur J Clin Invest
VOL. 28
NO. 5
1998 May
PP. 389-97
DOCUMENT TYPE- CLINICAL TRIAL; JOURNAL ARTICLE; RANDOMIZED CONTROLLED TRIAL
JOURNAL CODE- EN3
JOURNAL SUBSET- MEDJSM
ISSN- 0014-2972
CORPORATE AUTHOR- Department of General Internal Medicine, University of Bonn, Germany. Look@Uni-Bonn.de
PUBLICATION COUNTRY- ENGLAND
LANGUAGE- English

BACKGROUND: The aim of this work was to study the effects of combined oral administration of N-acetylcysteine (NAC) and sodium selenite (Se) on plasma glutathione (GSH), lymphocyte subpopulations and viral load in asymptomatic human immunodeficiency virus (HIV)-infected patients. METHODS: We used a prospective, randomized and controlled therapy trial with partial crossover. Twenty-four antiretroviral-naive HIV-infected outpatients at Centers for Disease Control (CDC)'93 stages I and II were randomized to receive the antioxidant combination NAC 600 mg t.i.d. and Se 500 micrograms per day for either 24 weeks (group A, n = 13) or from the end of week 12 (group B, n = 11) until the end of week 24. Thus, group B served as untreated control during the first 12 weeks. RESULTS: There was (a) a trend towards an increase in the percentage of CD4+ lymphocytes after 6 weeks (P = 0.08); (b) an increase in the CD4/CD8 ratio after 6 and 12 weeks (P = 0.02 and P = 0.04 respectively); and (c) a decrease in the absolute CD8/CD38 count and percentage of lymphocytes after 6 weeks (P = 0.002 and P = 0.033 respectively) and 12 weeks (P = 0.033, P = 0.1 respectively) in group A compared with the control period of group B. The effects observed in group A were, however, not paralleled to the same extent by group B after crossing-over to treatment after 12 weeks. In addition, erythrocyte glutathione peroxidase (GSH-Px) activity and GSH, glutathionedisulphide (GSSG) concentrations and the reduced/total GSH ratio were not affected by the treatment. Serum selenium levels increased significantly (P < 0.001) upon treatment. Viral load was not altered. CONCLUSIONS: The changes in lymphocyte subsets after NAC/Se treatment were not comparable to those after standard antiretroviral drug therapy. This, however, does not preclude per se possible benefits of antioxidant supplementation in HIV disease.

CHECK TAG(S)- Female; Human; Male

MEDICAL DESCRIPTOR(S)- *Acetylcysteine --TU; *HIV Infections --DT; *HIV-1 --DE; *Sodium Selenite --TU Administration, Oral; Adult; Erythrocytes --EN; Glutathione --BL; Glutathione Disulfide --BL; Glutathione Peroxidase --BL; HIV Infections --BL; HIV Infections --VI; Middle Age; Pilot Projects; Prospective Studies ; Reference Values; Selenium --BL; T-Lymphocyte Subsets --DE; Viral Load
CAS REGISTRY/EC NUMBER(S)- *EC-1.11.1.9; *10102-18-8; *27025-41-8; *616-91-1; *70-18-8; *7782-49-2
CAS SUBSTANCE NAME(S)- Glutathione Peroxidase; Sodium Selenite; Glutathione Disulfide; Acetylcysteine; Glutathione; Selenium .

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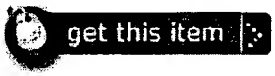
26. Oxidative stress and plasma antioxidant micronutrients in humans with HIV infection Ýsee comments"
MED 98-04 98103572 NDN- 194-0073-7686-5



Allard, J. P.; Aghdassi, E.; Chau, J.; Salit, I.; Walmsley, S.

JOURNAL NAME- Am J Clin Nutr
VOL. 67
NO. 1
1998 Jan
PP. 143-7
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- 3EY
JOURNAL SUBSET- MEDJSA; MEDJSM
ISSN- 0002-9165
CORPORATE AUTHOR- Department of Medicine, University of Toronto, Ontario, Canada. johane.allard@utoronto.ca
COMMENTS IN- Comment in:, Am J Clin Nutr, 1998 Aug;68(2):402-3
LAST REVISION DATE (VENDOR'S)- 981022
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Increased lipid peroxidation induced by reactive oxygen species may play a role in the stimulation of HIV replication. In this study we compared lipid peroxidation indexes and plasma antioxidant micronutrients between 49 nonsmoking HIV-positive patients with no active opportunistic infection (25 asymptomatic and 24 with AIDS) and 15 age-matched seronegative control subjects. Breath-alkane output, plasma lipid peroxides, antioxidant vitamins, and trace elements were measured. Vitamin C (40.7 +/- 3.02 compared with 75.7 +/- 4.3 mumol/L, $P < 0.005$), alpha-tocopherol (22.52 +/- 1.18 compared with 26.61 +/- 2.60 mumol/L, $P < 0.05$), beta-carotene (0.23 +/- 0.04 compared with 0.38 +/- 0.04 mumol/L, $P < 0.05$), and selenium (0.37 +/- 0.05 compared with 0.85 +/- 0.09 mumol/L, $P < 0.005$) concentrations were significantly lower in the HIV-positive patients. Lipid peroxides (50.7 +/- 8.2 compared with 4.5 +/- 0.8 mumol/L, $P < 0.005$), breath pentane (9.05 +/- 1.23 compared with 6.06 +/- 0.56 pmol.kg-1.min-1, $P < 0.05$), and ethane output (28.1 +/- 3.41 compared with 11.42 +/- 0.55 pmol.kg-1.min-1, $P < 0.05$) were significantly higher in the HIV-positive

patients. These results showed an increase in oxidative stress and a weakened antioxidant defense system in HIV-positive patients. Whether supplementation of antioxidant vitamins will reduce this oxidative stress is still unknown.

CHECK TAG(S)- Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't
MEDICAL DESCRIPTOR(S)- *Antioxidants --AN; *HIV Infections --BL; *Lipid Peroxidation --PH; *Oxidative Stress --PH; *Vitamins --BL Adult; Alkanes --AN; Breath Tests; Carotenoids --BL; Cohort Studies ; HIV Infections --PP; Lipid Peroxides --BL; Middle Age; Reference Values
CAS REGISTRY/EC NUMBER(S)- *0; *0; *0; *0; *0
CAS SUBSTANCE NAME(S)- Alkanes; Antioxidants; Carotenoids; Lipid Peroxides; Vitamins .

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27. Serum and plasma markers of nutritional status in children infected with the human immunodeficiency virus.
MED 98-03 98068144 NDN- 194-0069-3796-0

Henderson, R. A.; Talusan, K.; Hutton, N.; Yolken, R. H.; Caballero, B.

JOURNAL NAME- J Am Diet Assoc
VOL. 97
NO. 12
1997 Dec
PP. 1377-81
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- H6F
JOURNAL SUBSET- MEDJSA; MEDJSM
ISSN- 0002-8223
CORPORATE AUTHOR- Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore, Md. 21287-2631, USA.
CONTRACT/GRANT NUMBER- RR-00052.RR.NCRR; U01AI2756506.AI.NIAID
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

OBJECTIVE: To determine whether reduced serum or plasma protein and micronutrient levels are common in children infected with the human immunodeficiency virus (HIV) and whether these levels are different in children with growth retardation compared to those with normal growth. SUBJECTS: Children were separated into three groups: (a) HIV-infected with growth retardation (HIV + Gr); (b) HIV-infected with normal growth (HIV+); (c) HIV-uninfected with normal growth (HIV-). All children were afebrile and free of acute infection at the time of study. During a 24-hour stay in the Pediatric Clinical Research Unit, blood was drawn for analysis of total protein, albumin, zinc , selenium , and vitamin A levels; growth measurements were obtained; and dietary intake was assessed by 24-hour weighed food intake and 24-hour dietary recall. STATISTICAL ANALYSIS: Mean differences between groups were assessed by analysis of variance, and differences in the frequency of nutrient deficiency were determined by chi 2 analysis. RESULTS: Thirty-eight children between 2 and 11 years of age were studied: 10 HIV + Gr, 18 HIV+, and 10 HIV-. No statistically

significantly differences were noted in mean levels of albumin, prealbumin, zinc , and selenium . Mean serum level of vitamin A was significantly higher in the HIV + Gr group than in the other two groups. There were no significant differences between groups in the frequency of deficiency for any nutrient studied. Mean energy and nutrient intake was similar among groups.
APPLICATIONS/CONCLUSIONS: Abnormal serum or plasma protein or micronutrient levels were uncommon in this cohort of HIV-infected children, even in children with growth retardation. Routine monitoring of the level of proteins and micronutrients studied is unnecessary in the absence of specific clinical indicators of deficiency.

CHECK TAG(S)- Comparative Study; Female; Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Child Nutrition --PH; *HIV Infections --BL; *Micronutrients --ME; *Nutritional Status; *Serum Albumin --ME Biological Markers --BL; Body Weight; Child; Child, Preschool; Chromatography, High Pressure Liquid; CD4 Lymphocyte Count; Follow-Up Studies ; Growth Disorders --BL; Growth Disorders --CO; Growth Disorders --PP; HIV Infections --CO; HIV Infections --PP; Retrospective Studies ; Selenium --BL; Spectrophotometry, Atomic Absorption; Vitamin A --BL; Zinc --BL
CAS REGISTRY/EC NUMBER(S)- *0; *0; *11103-57-4; *7440-66-6; *7782-49-2
CAS SUBSTANCE NAME(S)- Biological Markers; Serum Albumin; Vitamin A; Zinc; Selenium

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28. The impact of high-risk patients on the results of clinical trials .
MED 98-02 98034891 NDN- 194-0067-2701-0

Ioannidis, J. P.; Lau, J.

JOURNAL NAME- J Clin Epidemiol
VOL. 50
NO. 10
1997 Oct
PP. 1089-98
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- JCE
JOURNAL SUBSET- MEDJSM
ISSN- 0895-4356
CORPORATE AUTHOR- Division of Geographic Medicine and Infectious Diseases, New England Medical Center Hospitals, Tufts University School of Medicine, Boston, Massachusetts, USA.
CONTRACT/GRANT NUMBER- T32 AI07389.AI.NIAID; R01 HS07782.HS.AHCPR
PUBLICATION COUNTRY- ENGLAND
LANGUAGE- English

The results of clinical trials may not reflect equally the experiences of all their individual participants. By modeling populations where patients have very diverse baseline risks of suffering an event of interest, it can be seen that very sick patients of high risk become the major determinants of

how many events occur in the whole population, even though they may represent only a small minority. Human immunodeficiency virus-related trials and trials of magnesium in acute myocardial infarction are analyzed. When the benefit or toxicity from a treatment varies with the baseline risk of each patient, the treatment effect may be markedly different in populations with a different representation of high- and low-risk patients. The results of small clinical trials studying heterogeneous populations with binary outcomes depend on the sampling and outcomes of very few high risk participants. Conversely, mega-trials studying homogeneous populations would miss subgroups or individuals with diverse treatment responses. In both cases, aggregate trial results may be misleading for the care of many individuals.

CHECK TAG(S)- Human; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *HIV Infections --MO; * Magnesium --TU; *Myocardial Infarction --MO; *Randomized Controlled Trials --SN Data Interpretation, Statistical; HIV Infections --TH; Meta-Analysis; Models, Statistical; Myocardial Infarction --DT; Risk Factors
CAS REGISTRY/EC NUMBER(S)- *7439-95-4
CAS SUBSTANCE NAME(S)- Magnesium .

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29. Serum selenium versus lymphocyte subsets and markers of disease progression and inflammatory response in human immunodeficiency virus-1 infection.
MED 97-10 97297041 NDN- 194-0047-1288-0

Look, M. P.; Rockstroh, J. K.; Rao, G. S.; Kreuzer, K. A.; Spengler, U.; Sauerbruch, T.

JOURNAL NAME- Biol Trace Elem Res
VOL. 56
NO. 1
1997 Jan
PP. 31-41
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- AU1
JOURNAL SUBSET- MEDJSM
ISSN- 0163-4984
CORPORATE AUTHOR- Department of General Internal Medicine, University of Bonn, Germany.
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Serum selenium levels were determined cross-sectionally in 57 HIV-infected patients who were classified according to the Centers for Disease Control (CDC) 1993 classification system. Mean serum selenium levels were lower in CDC stage II (58.7 +/- 12.2 micrograms/L; $p < 0.01$; $n = 18$) and stage III (47.6 +/- 11.3 micrograms/L; $p < 0.01$; $n = 19$) HIV-infected patients, than in healthy subjects (80.6 +/- 9.6 micrograms/L; $n = 48$) and stage I patients (73.6 +/- 16.5 micrograms/L; $n = 20$). Serum selenium levels were positively correlated with CD4 count, CD4/8 ratio, hematocrit, and serum albumin ($r = 0.42$; $r = 0.39$; $r = 0.48$; and $r = 0.45$; $p < 0.01$, respectively) and inversely with

serum levels of thymidine kinase (r = -0.49; p < 0.01; n = 49) and beta 2-microglobulin (r = -0.46; p < 0.001; n = 49). In addition, serum selenium levels in 20 randomly selected AIDS-free individuals (CDC I: n = 10; CDC II: n = 10) were inversely correlated with serum concentrations of interleukin-8 (IL-8) and soluble tumor necrosis factor receptors (sTNFR) types I and II. There was no correlation with serum immuneglobulin A and total serum protein levels. The results show that the progressive deprivation of serum selenium in HIV-infection is associated with loss of CD(4+)-cells and with increased levels of markers of disease progression and inflammatory response.

CHECK TAG(S)- Female; Human; Male
MEDICAL DESCRIPTOR(S)- *CD4 Lymphocyte Count; *HIV Infections--BL; *HIV Infections--IM; *HIV-1; * Selenium --BL; * Selenium --DF beta 2-Microglobulin --ME; Adult; Biological Markers; Case-Control Studies ; CD4-CD8 Ratio; HIV Infections --ET; Inflammation --ET; Interleukin-8 --BL; Middle Age; Receptors, Tumor Necrosis Factor --ME; Thymidine Kinase --BL
CAS REGISTRY/EC NUMBER(S)- *EC-2.7.1.21; *0; *0; *0; *0; *7782-49-2
CAS SUBSTANCE NAME(S)- Thymidine Kinase; beta 2-Microglobulin; Biological Markers; Interleukin-8; Receptors, Tumor Necrosis Factor; Selenium .

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30. Muscle involvement in human immunodeficiency virus-infected patients is associated with marked selenium deficiency.
MED 97-06 97205321 NDN- 194-0035-2060-0

Chariot, P.; Dubreuil-Lemaire, M. L.; Zhou, J. Y.; Lamia, B.; Dume, L.; Larcher, B.; Monnet, I.; Levy, Y.; Astier, A.; Gherardi, R.

JOURNAL NAME- Muscle Nerve
VOL. 20
NO. 3
1997 Mar
PP. 386-9
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- NN9
JOURNAL SUBSET- MEDJSM
ISSN- 0148-639X
CORPORATE AUTHOR- Department of Toxicology, Hopital Henri Mondor, Creteil, France.
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

NO-ABSTRACT

CHECK TAG(S)- Female; Human; Male
MEDICAL DESCRIPTOR(S)- *HIV Infections --BL; *HIV Infections --CO; *Muscular Diseases --BL; *Muscular Diseases --CO; * Selenium --DF Adult; Aged; Middle Age; Osmolar Concentration; Retrospective Studies ; Selenium --BL; Vitamin E --BL; Vitamin E --ME
CAS REGISTRY/EC NUMBER(S)- *1406-18-4; *7782-49-2

CAS SUBSTANCE NAME(S)- Vitamin E; Selenium .

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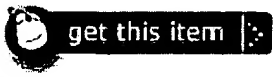
31. One-year antioxidant supplementation with beta-carotene or selenium for patients infected with human immunodeficiency virus: a pilot study .
MED 97-03 97034151 NDN- 194-0023-2193-0



Constans, J.; Delmas-Beauvieux, M. C.; Sergeant, C.; Peuchant, E.; Pellegrin, J. L.; Pellegrin, I.; Clerc, M.; Fleury, H.; Simonoff, M.; Leng, B.; Conri, C.

JOURNAL NAME- Clin Infect Dis
VOL. 23
NO. 3
1996 Sep
PP. 654-6
DOCUMENT TYPE- CLINICAL TRIAL; JOURNAL ARTICLE; RANDOMIZED CONTROLLED TRIAL
JOURNAL CODE- A4J
JOURNAL SUBSET- MEDJSM
ISSN- 1058-4838
CORPORATE AUTHOR- Hopital Saint-Andre, Bordeaux, France.
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

NO-ABSTRACT

CHECK TAG(S)- Human; Support, Non-U.S. Gov't
MEDICAL DESCRIPTOR(S)- *Antioxidants --TU; *Beta Carotene --TU; *HIV Seropositivity --DT; * Selenium --TU Pilot Projects
CAS REGISTRY/EC NUMBER(S)- *0; *7235-40-7; *7782-49-2
CAS SUBSTANCE NAME(S)- Antioxidants; Beta Carotene; Selenium .

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32. Effects of micronutrient intake on survival in human immunodeficiency virus type 1 infection.
MED 96-09 96245096 NDN- 194-0004-7177-7

Tang, A. M.; Graham, N. M.; Saah, A. J.

JOURNAL NAME- Am J Epidemiol
VOL. 143
NO. 12
1996 Jun 15
PP. 1244-56
DOCUMENT TYPE- JOURNAL ARTICLE; MULTICENTER STUDY
JOURNAL CODE- 3H3
JOURNAL SUBSET- MEDJSM; MEDJSX
ISSN- 0002-9262
CORPORATE AUTHOR- Department of Epidemiology, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD, USA.
CONTRACT/GRANT NUMBER- U01-AI-35042-02.AI.NIAID; RR007222.RR.NCRR
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

The authors examined the relation between dietary and supplemental micronutrient intake and subsequent mortality among 281 human immunodeficiency type 1 (HIV-1)-infected participants at the Baltimore, Maryland/Washington, DC, site of the Multicenter Acquired Immunodeficiency Syndrome Cohort Study. Subjects completed a semiquantitative food frequency questionnaire at their baseline visit in 1984. Levels of daily micronutrient intake were examined in relation to subsequent mortality over the 8-year follow-up period by using multivariate Cox models, adjusting for age, symptoms, CD4+ count, energy intake, and treatment. The highest quartile of intake for each B-group vitamin was independently associated with improved survival: B1 (relative hazard (RH) = 0.60, 95% confidence interval (CI) 0.38-0.95), B2 (RH = 0.59, 95% CI 0.38-0.93), B6 (RH = 0.45, 95% CI 0.28-0.73), and niacin (RH = 0.57, 95% CI 0.36-0.91). In a final model, the third quartile of beta-carotene intake (RH = 0.60, 95% CI 0.37-0.98) was associated with improved survival, while increasing intakes of zinc were associated with poorer survival. Intakes of B6 supplements at more than twice the recommended dietary allowance were associated with improved survival (RH = 0.60, 95% CI 0.39-0.93), while intakes of B1 and B2 supplements at levels greater than five times the recommended dietary allowance were associated with improved survival (B1: RH = 0.61, 95% CI 0.38-0.98; B2:RH = 0.60, 95% CI 0.37-0.97). Any intake of zinc supplements, however, was associated with poorer survival (RH = 1.49, 95% CI 1.02-2.18). These data support the performance of clinical trials to assess the effects of B-group vitamin supplements on HIV-1-related survival. Further studies are needed to determine the optimal level of zinc intake in HIV-1-infected individuals.

CHECK TAG(S)- Human; Male; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Diet; *HIV Infections --MO; *HIV-1; *Micronutrients Adult; Cohort Studies ; Niacin --AD; Proportional Hazards Models; Questionnaires; Survival Analysis; Vitamin A --AD; Vitamin B Complex --AD; Zinc --AD
CAS REGISTRY/EC NUMBER(S)- *11103-57-4; *12001-76-2; *59-67-6; *7440-66-6
CAS SUBSTANCE NAME(S)- Vitamin A; Vitamin B Complex; Niacin; Zinc .

Citations from MEDLINE(R) DATABASE (1993 TO 1997): ME2

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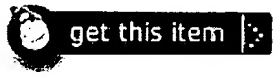
33. Synoviorthesis with colloidal 32P chromic phosphate for the treatment of hemophilic

arthropathy Ýsee comments¨
MED 94-07 94201208 NDN- 193-0040-4870-0



Rivard, G. E.; Girard, M.; Belanger, R.; Jutras, M.; Guay, J. P.; Marton, D.

JOURNAL NAME- J Bone Joint Surg Am
VOL. 76
NO. 4
1994 Apr
PP. 482-8
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- HJR
JOURNAL SUBSET- MEDJSA; MEDJSM
ISSN- 0021-9355
CORPORATE AUTHOR- Department of Pediatrics, Hopital Sainte-Justine, Montreal, Quebec, Canada.
COMMENTS IN- Comment in:, J Bone Joint Surg Am, 1995 May;77(5):807-8
LAST REVISION DATE (VENDOR'S)- 950809
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Between 1977 and 1992, we performed ninety-two synoviortheses (destruction of synovial tissue by intra-articular injection of a radioactive agent) on forty-eight patients who had a severe congenital disorder of hemostasis and chronic hemophilic synovitis that was resistant to conventional treatment. Colloidal 32P chromic phosphate was injected intra-articularly: 1.0 millicurie for knees and 0.5 millicurie for other joints. The duration of follow-up ranged from one to fifteen years. The frequency and importance of bleeding decreased in most of the patients. The range of motion of half of the joints remained stable or improved and that of the other half continued to decrease. Radiographic scores worsened progressively despite the decreased frequency of hemarthrosis. In most patients, the extra-articular leakage of the radioactive agent was slight. Chromosome breakages were observed almost exclusively in patients who were seropositive for human immunodeficiency virus and in whom the CD4-lymphocyte count was decreased from normal. The patients' level of satisfaction with the results was high.

CHECK TAG(S)- Human; Male
MEDICAL DESCRIPTOR(S)- *Hemarthrosis --RT; * Phosphorus Radioisotopes --TU; *Synovial Membrane --RE Adolescence; Adult; Child; Chromium Compounds --AD; Chromosomes, Human --RE; Colloids; Injections, Intra-Articular; Joints --PH; Phosphates --AD; Phosphorus Radioisotopes --AD; Prospective Studies ; Range of Motion, Articular
CAS REGISTRY/EC NUMBER(S)- *0; *0; *0; *0; *7789-04-0
CAS SUBSTANCE NAME(S)- Chromium Compounds; Colloids; Phosphates; Phosphorus Radioisotopes; chromic phosphate .

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34. Dietary micronutrient intake and risk of progression to acquired immunodeficiency

syndrome (AIDS) in human immunodeficiency virus type 1 (HIV-1)-infected homosexual men.

MED 94-03 94078959 NDN- 193-0029-8213-2

Tang, A. M.; Graham, N. M.; Kirby, A. J.; McCall, L. D.; Willett, W. C.; Saah, A. J.

JOURNAL NAME- Am J Epidemiol
VOL. 138
NO. 11
1993 Dec 1
PP. 937-51
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- 3H3
JOURNAL SUBSET- MEDJSM; MEDJSX
ISSN- 0002-9262
CORPORATE AUTHOR- Department of Epidemiology, Johns Hopkins University, School of Hygiene and Public Health, Baltimore, MD 21205.
CONTRACT/GRANT NUMBER- N01-AI-72634.AI.NIAID; RR007222.RR.NCRR
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

The authors sought to determine if different levels of dietary intake of micronutrients are associated with the progression of human immunodeficiency virus type 1 (HIV-1) infection to acquired immunodeficiency syndrome (AIDS). A total of 281 HIV-1 seropositive homosexual/bisexual men were seen semiannually since 1984 at the Baltimore/Washington, DC site of the Multicenter AIDS Cohort Study. Participants completed a self-administered semiquantitative food frequency questionnaire at baseline. Levels of daily micronutrient intake at baseline were examined in relation to subsequent progression to AIDS (1987 Centers for Disease Control definition; n = 108) during a median follow-up period of 6.8 years. For each nutrient, the authors used a Cox proportional hazards model to adjust for age, presence of symptoms, CD4+ lymphocyte count, energy intake, use of antiretrovirals, and use of Pneumocystis carinii pneumonia prophylaxis. The highest levels of total intake (from food and supplements) of vitamins C and B1 and niacin were associated with a significantly decreased progression rate to AIDS: vitamin C (relative hazard (RH) = 0.55, 95% confidence interval (CI) 0.34-0.91), vitamin B1 (RH = 0.60, 95% CI 0.36-0.98), and niacin (RH = 0.52, 95% CI 0.31-0.86). The relation between total vitamin A intake and progression to AIDS appeared to be U-shaped; the lowest and highest quartiles of intake did most poorly, while the middle two quartiles were associated with significantly slower progression to AIDS (RH = 0.55, 95% CI 0.35-0.88). Increased intake of zinc was monotonically and significantly associated with an increased risk of progression to AIDS (for highest vs. lowest quartiles, RH = 2.06, 95% CI 1.16-3.64). In a final multinutrient model, vitamin A, niacin, and zinc remained significantly associated with progression to AIDS, while vitamin C was only marginally significant.

CHECK TAG(S)- Human; Male; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Acquired Immunodeficiency Syndrome --EP; *Bisexuality; *CD4-Positive T-Lymphocytes; *Homosexuality; *HIV Seropositivity --CO; *HIV-1; *Nutritional Status; *Trace Elements --AD; *Vitamins --AD Acquired Immunodeficiency Syndrome --ET; Adult; Antiviral Agents --TU; Baltimore --EP; Confidence Intervals; District of Columbia --EP;

Energy Metabolism; Follow-Up Studies ; HIV Seropositivity --BL; HIV Seropositivity --DT; HIV Seropositivity --ME; Leukocyte Count; Nutrition Surveys; Proportional Hazards Models; Risk Factors; Survival Analysis
CAS REGISTRY/EC NUMBER(S)- *0; *0; *0
CAS SUBSTANCE NAME(S)- Antiviral Agents; Trace Elements; Vitamins .

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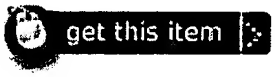
35. Molecular modeling studies suggest that zinc ions inhibit HIV-1 protease by binding at catalytic aspartates.
MED 94-01 94008892 NDN- 193-0016-6822-3



York, D. M.; Darden, T. A.; Pedersen, L. G.; Anderson, M. W.

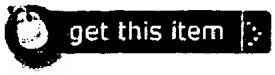
JOURNAL NAME- Environ Health Perspect
VOL. 101
NO. 3
1993 Aug
PP. 246-50
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- EI0
JOURNAL SUBSET- MEDJSM
ISSN- 0091-6765
CORPORATE AUTHOR- Laboratory of Molecular Toxicology, National Institute of Environment Health Sciences, Research Triangle Park, NC 27709.
CONTRACT/GRANT NUMBER- HL27995.HL.NHLBI
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Human immunodeficiency virus type 1 protease is inhibited in vitro by zinc ions at neutral pH. The binding site of these ions is not known; however, experimental data suggest that binding may occur in the active site. To examine the possibility of zinc binding in the active site, molecular dynamics simulations in the presence and absence of zinc have been carried out to 200 psec. The results are compared with the 2.8-A crystallographic structures of a synthetic HIV-1 protease, and a zinc binding site at the catalytic aspartate residues (Asp-25, Asp-25') is proposed. Molecular dynamics simulations show that the zinc ion remains stably bound in this region, coordinating the carboxylate side chains of both aspartate residues. Interaction with zinc does not disrupt the dimeric structure of the protein or significantly alter the structure of the active site. These data are consistent with experimental studies of HIV-1 protease inhibition by zinc and give strong evidence that this is the binding site that leads to inactivation.

CHECK TAG(S)- Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Aspartic Acid --ME; *HIV Protease Inhibitors --ME; *Models, Biological; *Models, Chemical; * Zinc --ME Binding Sites
CAS REGISTRY/EC NUMBER(S)- *0; *56-84-8; *7440-66-6
CAS SUBSTANCE NAME(S)- HIV Protease Inhibitors; Aspartic Acid; Zinc .

36. Role of nutritional status and weight loss in HIV seroconversion among Rwandan women.

MED 93-08 93267397 NDN- 193-0006-9908-0



Moore, P. S.; Allen, S.; Sowell, A. L.; Van de Perre, P.; Huff, D. L.; Serufilira, A.; Nsengumuremyi, F.; Hulley, S. B.

JOURNAL NAME- J Acquir Immune Defic Syndr
VOL. 6
NO. 6
1993 Jun
PP. 611-6
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- JOF
JOURNAL SUBSET- MEDJSM
ISSN- 0894-9255
CORPORATE AUTHOR- Department of Medicine, University of California, San Francisco.
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

To investigate nutritional status and heterosexual human immunodeficiency virus (HIV) transmission, we performed a nested case-control study of sexually active, adult women in Kigali, Rwanda. Forty-five women who seroconverted during the 24-month study period were compared to 74 women who remained seronegative throughout the study. Seroconvertors and nonseroconvertors did not differ in preseroconversion serum levels of vitamin A, carotenoids, vitamin E, selenium , albumin, ferritin, or cholesterol. Weight loss, however, was a significant predictor of eventual HIV seroconversion. Subsequent seroconvertors lost an average of 1.5 kg during the first 6 months of the study compared with a 1.0-kg gain ($p = 0.001$) for nonconvertors. Nine of 27 (33%) seroconvertors, compared with one of 44 (2%) controls, lost at least 5 kg in the 6-month period beginning 1 year before their seroconversion (odds ratio, 21.5, 95% confidence interval 4.1-112). The association between weight loss and seroconversion was independent of other potential risk factors such as socioeconomic status, pregnancy, and genital ulcer disease. In addition to these findings for measured weight loss during follow-up, reported weight loss before enrollment was also a risk factor for subsequent seroconversion. Additional studies of heterosexual HIV transmission are needed to determine whether or not weight loss is causally related to susceptibility for HIV infection.

CHECK TAG(S)- Female; Human
MEDICAL DESCRIPTOR(S)- *HIV Seropositivity --IM; *Nutritional Status Adolescence; Adult; Case-Control Studies ; Enzyme-Linked Immunosorbent Assay; HIV Antibodies --IM; HIV Infections --TM; HIV Seropositivity --EP; HIV Seropositivity --TM; HIV-1 --IM; Risk Factors; Rwanda; Sex Behavior; Weight Loss
CAS REGISTRY/EC NUMBER(S)- *0
CAS SUBSTANCE NAME(S)- HIV Antibodies

Citations from MEDLINE(R) DATABASE (1990 TO 1993): ME3

37. Nutritional status of HIV-infected patients during the early disease stages.
MED 90-12 90375776 NDN- 192-0099-0708-6

McCorkindale, C.; Dybevik, K.; Coulston, A. M.; Sucher, K. P.

JOURNAL NAME- J Am Diet Assoc
VOL. 90
NO. 9
1990 Sep
PP. 1236-41
DOCUMENT TYPE- CLINICAL TRIAL; JOURNAL ARTICLE; RANDOMIZED CONTROLLED TRIAL
JOURNAL CODE- H6F
JOURNAL SUBSET- MEDJSA; MEDJSM
ISSN- 0002-8223
CORPORATE AUTHOR- San Francisco General Hospital, California 94110.
CONTRACT/GRANT NUMBER- M01-RR00070.RR.NCRR; AI-27666.AI.NIAID
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Nutritional status was monitored in two groups of patients infected with human immunodeficiency virus (HIV) for up to 16 months. Twenty-six subjects were recruited from patients enrolled in acquired immunodeficiency syndrome treatment protocols in the early stages of the disease. Body weight, percent body fat, serum albumin, total protein concentration, hemoglobin, hematocrit, and total lymphocyte count were monitored monthly. Four-day food intake records were kept every 4 months. In the 19 patients followed for 16 months (Group 1), a significant (p less than .05) decrease was observed in body weight, percent body fat, body mass index (BMI), and total protein concentration. Seven subjects (Group 2), with more advanced disease than Group 1, demonstrated a significant (p less than .05) decrease in total lymphocyte count over a 5-month period. This latter group fell just below the normal range for hemoglobin and hematocrit concentrations during the study period. With the exception of a decrease in vitamin B-6, zinc , and total energy intake, food records closely matched the Recommended Dietary Allowance for the age group. Thus, we conclude that decreases in body weight, percent body fat, and BMI may be the earliest indication of decreased nutritional status in HIV-infected patients.

CHECK TAG(S)- Human; Male; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Acquired Immunodeficiency Syndrome --ME; *Diet; *Nutritional Status Acquired Immunodeficiency Syndrome --BL; Acquired Immunodeficiency Syndrome--DT; Adult; Double-Blind Method; Energy Intake; Hematocrit; Hemoglobins; Middle Age; Nutritional Requirements; Randomized Controlled Trials ; Zalcitabine --TU; Zidovudine --TU
CAS REGISTRY/EC NUMBER(S)- *30516-87-1; *7481-89-2

CAS SUBSTANCE NAME(S)- Zidovudine; Zalcitabine .

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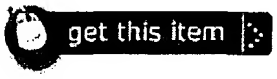
38. Relationship of serum copper and zinc levels to HIV-1 seropositivity and progression to AIDS.
MED 91-12 91366578 NDN- 192-0042-7146-3



Graham, N. M.; Sorensen, D.; Odaka, N.; Brookmeyer, R.; Chan, D.; Willett, W. C.; Morris, J. S.; Saah, A. J.

JOURNAL NAME- J Acquir Immune Defic Syndr
VOL. 4
NO. 10
1991
PP. 976-80
DOCUMENT TYPE- JOURNAL ARTICLE
JOURNAL CODE- JOF
JOURNAL SUBSET- MEDJSM
ISSN- 0894-9255
CORPORATE AUTHOR- Department of Nutrition, Johns Hopkins Hospital, Baltimore, Maryland.
CONTRACT/GRANT NUMBER- N01-A1-72634; RR007222.RR.NCRR
PUBLICATION COUNTRY- UNITED STATES
LANGUAGE- English

Dietary, serum, and tissue levels of copper and zinc were determined at baseline in a cohort of homosexual men to investigate the relationship of these factors to human immunodeficiency virus type 1 (HIV-1) seropositivity and subsequent progression to AIDS. Using a nested case control design, 54 asymptomatic HIV-1 seropositives who later progressed to AIDS were compared with 54 HIV-1 seropositives who did not progress and 54 seronegatives (mean follow-up time 2.5 years). Serum levels of copper and zinc were estimated from frozen serum samples, tissue levels from stored toenail samples, and dietary intakes from a semiquantitative food frequency questionnaire administered at baseline. Neither dietary copper and zinc nor their levels in toenails were associated with HIV-1 seropositivity or progression to AIDS. However, serum copper levels were higher ($p = 0.002$) in HIV-1-seropositive progressors (mean = 115.6 micrograms/dl; SD = 17.1) than the seropositive nonprogressors (mean = 109.0 micrograms/dl; SD = 15.8) and the seronegatives (mean = 101.9 micrograms/dl; SD = 16.7). Conversely, serum zinc levels were lower ($p = 0.016$) in the seropositive progressors (mean = 85.2 micrograms/dl; SD = 11.5) than the seropositive nonprogressors (mean = 90.7 micrograms/dl; SD = 12.0) and the seronegatives (mean = 92.0 micrograms/dl; SD = 14.7). Furthermore, in a logistic regression, higher serum copper (odds ratio per 20-micrograms/dl increase = 2.23; 95% confidence interval = 1.02-4.87) and lower serum zinc (odds ratio per 20-micrograms/dl increase = 0.30; 95% confidence interval = 0.14-0.66) predicted progression to AIDS independently of baseline CD4+ lymphocyte level, age, and calorie-adjusted dietary intakes of both nutrients.(ABSTRACT TRUNCATED AT 250 WORDS)

CHECK TAG(S)- Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
MEDICAL DESCRIPTOR(S)- *Acquired Immunodeficiency Syndrome --BL; *Copper --BL; *HIV Seropositivity --BL; * Zinc --BL Acquired Immunodeficiency Syndrome --DI; Acquired Immunodeficiency Syndrome --EP; Adult; Biological Markers; Cohort Studies ; Copper --AN; Diet; HIV Seropositivity --DI; HIV Seropositivity --EP; Multicenter Studies ; Nails --CH; Prospective Studies ; Risk Factors; Toes; United States --EP; Zinc --AN
CAS REGISTRY/EC NUMBER(S)- *0; *7440-50-8; *7440-66-6
CAS SUBSTANCE NAME(S)- Biological Markers; Copper; Zinc